

LITERATURE OF MANUFACTURERS

Catalogues, bulletins and other direct advertising material recently issued. Manufacturers are requested to send copies of new trade literature promptly to Electric Refrigeration News.

Arctic-Aire

The Hall system of cooling for railroad equipment, commercial and domestic use is described in a catalog issued by Arctic-Aire Co., Inc., Munsey Bldg., Baltimore, Md. Four types of commercial water coolers, a railroad fixture, and a refrigerator unit are illustrated. Two pages are devoted to pictures of the pump unit and its parts. A sketch shows the water raising system and electric system used in passenger coaches.

Campbell

A leaflet from Campbell Refrigerator Co., Milwaukee, Wis., is devoted to hospital refrigeration. A diet kitchen model illustrated has a white vitrolite glass lining, and is 36" wide, 24" deep, and 72" high. A special utility room refrigerator for cracked-ice and containing a medicine cabinet is also pictured. A list includes the items included in a complete hospital installation.

Electrolux

A 36 page booklet issued by Servel Sales, Inc., contains 108 practical recipes which can be made in the Electrolux gas refrigerator. The divisions of the book include, entrees, beverages, salads, parfaits, mousses, sherbets, ice creams, and desserts.

Marsh

Bulletin No. 5000 issued by Jas. P. Marsh & Co., 2073 Southport Ave., Chicago, details the construction and operation of the Marsh Merkustat, an automatic, mercury-to-mercury control unit for mechanical refrigeration. The mechanism is activated by a steel bourdon tube. The mercury tube is of borosilicate glass and is manufactured by Cooper-Hewitt Co. Marsh pressure gauges are also described in the catalog, and a mounting board for the instruments is illustrated.

Ozopure

A broadside issued by Billings Ozone Corp., McGraw-Hill Bldg., Chicago, describes the Ozopure water sterilizer. The parts are essentially, a filter, and a vacuum tube ozone generator. Two models are shown, the household type, and the refrigerating type operated by an electrically operated cooler.

Rhineland

Catalog No. 100 issued by Rhineland Refrigerator Co., Rhineland, Wis., contains specifications of cabinets for hotels, large residences, and restaurants for architects and builders. Eleven of the models shown have porcelain interior and exterior with capacities ranging from 25.7 gross cu. ft. interior to 9.8 gross cubic feet interior. There are also eighteen models shown which may be obtained in colors. These have metal exterior with laquer finish and white porcelain interior. In addition two broadsides have also been received. One illustrates four models of cabinets for multiple hook-up, the other shows four types of cabinets with legs for mechanical units.

Steel-Craft

A broadside from Steel-Craft Manufacturing Co., 4617 Arthington St., Chicago, Ill., describes all-steel refrigerator cabinets, sectional steel kitchen units, and ironing board cabinets. Two models of refrigerators are shown, with interior capacities of 4.1 cu. ft. and 4.9 cu. ft. The refrigerators are shown as parts of complete kitchenette units. Scale drawings with dimensions are printed for each unit.

Electric Cooling Solves Problem of Merchandising Frozen Suckers



The popular popcorn wagon of A. M. Hodge, Longmont, Colo., where frozen suckers are served from the G. E. refrigerator shown below

In Longmont, Colo., a nickel, to a boy or girl, is something to be converted into a "frozen sucker" at the earliest opportunity. This popular delicacy is to be obtained at its frigid best from A. M. Hodge, whose popcorn wagon on Main street is the center of juvenile attention, particularly on Saturday and Sunday, the trading day and tourist day of the week respectively.

Until Mr. Hodge installed his General Electric refrigerator recently, "frozen sucker" was just about the stickiest confection a delighted youth could lay its hands upon. Mr. Hodge kept them in a pail of ice under his counter and mothers said unkind things about him for the dresses and shirts they had to launder when their offspring had finished the precarious business of consuming a "frozen sucker."

The popcorn wagon's business dwindled. Then the ice cream people informed Mr. Hodge that supplying him with their product was more trouble than it was worth, that he would have to get something to replace his bucket of ice if he wanted service from them.

He began looking for a small ice refrigerator in the hope of picking up something adequate for \$20 or \$25. In the course of his shopping he encountered Harold Dickerman, of the Longmont Hardware and Department Store, General Electric dealers, and bought a \$230 refrigerator.

The problem of installing it was simply one of removing the legs to give the coil clearance at the ceiling and running a line into the drug store on the corner for current. The wagon is stationary.

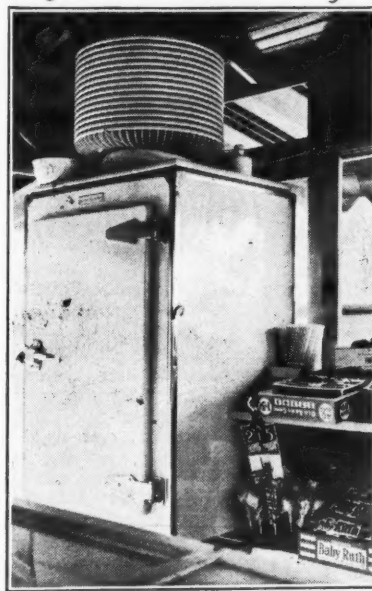
"We do twice as much business in soft drinks, frozen confections, and ice cream in one day as we used to do in a week," says Mr. Hodge. "And at an expense of 3 cents a day for current. It cost me 20 cents a day for ice before."

Electricity in Longmont costs 2 cents a kilowatt. The city owns its own plant. Mr. Hodge has had pictures made of the installation and uses them in advertising his business in the local newspapers. A popcorn wagon that uses newspaper advertising is about as rare as a Longmont kid without a "frozen sucker."

Kelvinator and Trupar Appoint Agents in Santa Ana, Calif.

S. Hill & Son, Santa Ana, Calif., have taken the agency for the Trupar electric refrigerator. R. S. Campbell will have charge of sales in that territory.

The MacFadden Dale Hardware Co., Santa Ana, has been appointed Kelvinator agent in that district.



REQUESTS FOR INFORMATION

Readers who can assist in furnishing correct answers to inquiries or who can supply additional information are invited to address Electric Refrigeration News, referring to the query number.

White Celluloid

Query No. 273—A subscriber in Ohio asks, "Would you please tell us where we could secure some white celluloid to be used underneath the hinges and fasteners on porcelain white enameled refrigerators. What thickness do you recommend?"

Uses of Zinc

Query No. 274—A reader in Indiana writes, "We are interested in supplying zinc to manufacturers of electric refrigerators and would be pleased for any information as to the parts for which zinc is used."

Note—Zinc is used to some extent in the following ways:
1. For hot-galvanizing cooling units both domestic and commercial.
2. For galvanizing the inside of compressor units to seal possible air holes.
3. Strip zinc is used to some extent as trim in which case it is either chrome or nickel plated.—Editor.

Ice Cube Tray Dimensions

Query No. 275—A reader in Pennsylvania writes, "It has been my experience in connection with certain installations of electric refrigerators that the ice cube tray varies in size. I would like to know how the Sanders Co., Detroit, take care of this variation in the Ice Tray ice cream packages it manufactures. I would like to procure a dimension sheet showing the various size trays manufactured and used by various makers of refrigerators."

Note—See page 23 of this issue for a tabulation of ice cube tray dimensions.—Editor.

Lead-In Pipes

Query No. 276—A reader in Illinois asks, "Could you tell us a source of supply on 1½" diameter sleeve for the lead-in pipes through the wall to the refrigerator?"

William Thode Named Norge District Manager

William Thode has been appointed district representative in the eastern territories near Philadelphia and Washington, by the Norge Corp., Detroit. His headquarters are at Philadelphia.

Peerless Ice Machine Moves

The Peerless Ice Machine Co. has moved to its new factory at 515 West 35th St., Chicago, Ill.

ALLING CO. AND DETROIT DRY-KOLD REFRIGERATOR OFFICE HOLD BANQUET

The R. B. Alling Co., 4490 Cass Avenue, Detroit, Copeland distributor and the Detroit office of the Dry-Kold Refrigerator Co., 2865 East Grand Blvd., held a joint banquet at the Italian Gardens, Detroit, on August 6.

W. C. Whitchee, treasurer of the Dry-Kold Refrigerator Co., Niles, Mich., was guest of honor and addressed those present on the subject of refrigerator construction.

Stanley C. Collins, district manager for the Dry-Kold Co., stressed the importance of cooperation between the manufacturers of refrigerator cabinets and the makers of electric refrigeration systems.

Application of electric refrigerating systems was the subject of a talk by Fred M. Hancock, commercial sales manager of the R. B. Alling Co.

OMAHA FRIGIDAIRE BRANCH BREAKS 1928 SALES RECORD

A. F. Eichenlaub, Frigidaire branch manager in Omaha, made the announcement recently that the first six months of sales by the Omaha branch was 87 per cent greater than the same period in 1928.

Mr. Eichenlaub says the country wide contest staged by Frigidaire resulted in a gain of 43 per cent all over the states, with Oakland, Calif., walking away with the prize for making the greatest showing above 1928 of any branch in the country.

FEDERAL SODA FOUNTAIN CO. ORGANIZES IN BOSTON, MASS.

The Federal Soda Fountain Co., 705 Beacon St., Boston, Mass., has been incorporated as a sales and distributing organization. The new company consists of ten men formerly connected with the American Soda Fountain Co. of Watertown, and is headed by Thacher Jenney, who was formerly vice-president and general manager of the American Soda Fountain Co. and Arthur Balfour, former New England sales manager of the same concern.

Associated with them are Walter MacKeen, Chester Hacker, Robert Austin, R. W. Powell, Michael Goodman and Willard Gulesian. The Federal company has secured the New England agency for the Bastian-Blessing line of soda fountains.

Lincoln Copeland Concern Reorganizes

The Copeland Refrigeration Co., owned by Dr. R. C. Olney of Lincoln, Neb., has recently been reorganized. Mr. Toms has been replaced as general manager by H. B. Pettibone of Seattle. Mr. Pettibone has been connected with domestic refrigeration at Seattle for the last five years. Copeland sold thirty-five refrigerators in Omaha during July.

Fred D. Turner, an old-timer in the auto game, is now city salesman in Omaha for Copeland. He has seven men in his crew and will put on a selling campaign for the next few months. This concern has tied up with one of the big radio houses and will work that during the off season in refrigeration.

G. E. Man Averages a Sale a Day For Two Months

Joe Coyle, salesman for Sylvester and Carson, General Electric refrigerator dealers in Quincy, Mass., has set a record for individual sales. He has sold 60 General Electric refrigerators in 56 days to individual owners.

Mr. Coyle is the winner of many prizes in recent contests. He makes many of his calls, at least one-half of them, after seven o'clock in the evening, because he says that is the time to secure a better audience in the homes of prospects.

McCray Representative Gets Larger Territory in the Northwest

A. A. Cairns, McCray representative for the State of Oregon, has taken over a larger territory and will now distribute McCray cases in Washington and Alaska territory. Another office will be opened in Seattle.

Yale & Towne Announce Recent Purchase of Stuebing Cowan Co.

Purchase of the Stuebing Cowan Co., Cincinnati, Ohio, and Holyoke, Mass., manufacturers of hand lift trucks, has been announced by the Yale & Towne Manufacturing Co., Stamford, Conn., manufacturers of material handling devices. An official statement says that the executive and manufacturing personnel of the purchased company will remain intact.

THE CONDENSER

ADVERTISING RATE fifty cents per line (this column only).

SPECIAL RATE if paid in advance—Positions Wanted—fifty words or less, one insertion \$2.00, additional words four cents each. Three insertions \$5.00, additional words ten cents each. All other classifications—fifty words or less, one insertion \$3.00, additional words six cents each. Three insertions \$8.00, additional words sixteen cents each.

POSITIONS AVAILABLE

WANTED—Draftsmen also practical Engineers familiar with refrigeration machinery and plants. Apply by letter to Box 333, Salem, Ohio.

POSITIONS WANTED

CHIEF ENGINEER AVAILABLE—Ten years' experience in electric refrigeration with leading manufacturers in charge of engineering design and production methods. Wishes to communicate with manufacturer east of St. Louis. Box No. 180.

PURCHASING DIRECTOR—man now employed by nationally known refrigerator manufacturing company, whose management has recently undergone changes, desires like position. Has excellent record with large manufacturing companies, an able executive with pleasing personality and best of references. Address confidential Box No. 186.

YOUNG MAN, thirty-six years of age having eleven years experience in electric refrigeration is seeking an opening as either road sales or service representative, can combine both in a remote territory. Box No. 187.

SERVICE ENGINEER, married, wishes permanent connection with reliable concern handling sulphur or methyl equipment. Thoroughly experienced with multiple, commercial and domestic systems under the new code. Past two years highly successful in East, can handle men and make repairs at job. References satisfactory. In reply, give all details and salary. Marshall N. Cline, 219 Berkley Ave., Bloomfield, N. J.

LASSEN TEMPERATURE-PRESSURE CONTROLS

Positive Range and Differential Adjustment

Non-Deteriorating Mercury Tube Switch—Meets all Requirements

GOODNOW & BLAKE MFG. CO.
3840 BEAVER STREET,
DETROIT, MICH.

MANUFACTURERS OF Sheet Metal Parts

To Your Specifications

Bases, Angle Iron to support units. Guards—to enclose units.

For Household Refrigerators we make outside steel panels, food compartments, etc.

Ice Cream cabinets and parts.

MOTORS METAL MFG. CO.
5936 Milford St. - Detroit, Mich.

DRINKING WATER FAUCETS

for Refrigerators - Water Coolers

New model now available for use on city water pressure



Cordley & Hayes

1 Leonard St. New York City

To Manufacturers of Electric and Gas Units

Your specifications for CABINETS will be accurately carried out when given to

PUFFER-HUBBARD MFG. CO.
MINNEAPOLIS, MINN.

RUBBER ACCESSORIES FOR THE REFRIGERATION INDUSTRY:

V-TYPE COMPRESSOR BELTS. "GLOBE" Brand—Original makers V-Type Belt—"RED STRAND" brand—our latest development. Also Anti-Noise Motor Rubber Bushings or Cushions.

Globe Rubber & Tire Co., Inc.
Prospect and Globe Streets
TRENTON, N. J., U. S. A.

Subscription Order

ELECTRIC REFRIGERATION NEWS,
550 MACCABEES BUILDING, DETROIT, MICH.

Please enter subscription to Electric Refrigeration News.

United States and Possessions:

☐ \$2.00 per year. ☐ Three years for \$5.00.

All other Countries:

☐ \$2.25 per year. ☐ Two years for \$4.00

I am enclosing payment in the form of

☐ Check ☐ P. O. Order ☐ Cash

Name

Street Address

City and State

Remarks:

ELECTRIC REFRIGERATION NEWS

The business newspaper of the refrigeration industry

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PRICE FIFTEEN CENTS

NATION TO HEAR 50° MESSAGE BY RADIO

FRIGIDAIRE EXPANDS ENGINEERING DEP'T; NOW IN 2 DIVISIONS

Keilholtz Made Technical Assistant to the President

APPOINTMENT of L. S. Keilholtz, for many years chief engineer of Frigidaire Corporation to the executive offices as technical assistant to the president is announced by G. Biechler as part of an expansion of the organization's engineering activities.

The engineering department has been divided into two divisions. One, the research and future demands division, headed by H. M. Williams, will have the responsibility of investigating new uses for refrigeration and developing products to supply them. The other, the product engineering division, with B. D. Kunkle in charge, will carry the engineering of new products to a place where they are ready for factory production.

"It has been very plainly indicated that development of automatic refrigeration has only just begun," Mr. Biechler said. "Frigidaire equipment is already being put to many uses that were not even thought of a few years ago. Requests and suggestions from the field regarding new applications of automatic refrigeration units indicate that most of our work still lies ahead."

"Frigidaire has pioneered in household and commercial electric refrigeration. The organization will continue to pioneer and will from time to time announce new products as they are developed and need for them arises."

In this broader field of activity, Mr. Keilholtz will serve as technical expert for general operations of the organization.

Mr. Williams, who becomes manager of the research and future demands division, is a chemical engineer, educated at Otterbein College and Ohio State University. He was associated with the National Cash Register Company, Remington Arms, and with General Motors Research Corporation before becoming chemical engineer for Frigidaire Corporation in 1924. He is a member of the advisory committee of the U. S. Bureau of Standards and active member of many national technical societies. Work of his division will be sectionalized under the following heads: H. B. Hull, H. F. Smith, G. A. Buvinger, R. E. Robillard and F. L. Chase.

Mr. Kunkle, manager of the product engineering division, has been superintendent of Plant No. 1 for the past three years. Before becoming a member of the Frigidaire organization he was in charge of the automotive equipment department of the Westinghouse Electric Manufacturing Company, chief engineer of the Caskey-Dupree Company of Marietta, Ohio, and head of the Klaxon Horn department of the Remy Company at Anderson. He is a graduate of Penn State College. S. M. Schweller will be assistant manager of this division. J. G. King will be in charge of experimental work, assisted by H. P. Braeutigam. L. A. Anderson will be in charge of models and designs and L. Hahn of production drafting.

Mr. Keilholtz went to Dayton twenty years ago. He spent two years with the National Cash Register Co., as a designer and five years as chief engineer at the Delco-Light plant. Thirteen years ago when the Delco-Light Company was organized he became its chief engineer. He was placed in charge of Frigidaire engineering when the Delco-Light Company took over its development and surrendered his connection with the latter concern at the time Frigidaire Corporation became a separate subsidiary of General Motors.

Before coming to Dayton Mr. Keilholtz was employed by the Fairbanks-Morse Company of Beloit, Wis., and by the Thos. B. Jeffrey Company, the antecedent of Nash motors.

GENERAL MOTORS CORP. ACQUIRES DAY-FAN CO.

The Day-Fan Electric Co., Dayton, Ohio, manufacturer of motors, radio sets and fans, has been merged with the General Motors Corp., it is announced by Lee Warren James, president of the Day-Fan company. The deal, it is reported, represents about \$1,400,000 and was consummated through an exchange of stock.

The personnel and policy of the Dayton company will remain unchanged, according to C. E. Wilson, vice president of the General Motors Corp.

Chicago Aldermen Instruct Industry Committee to Reach Agreement with Commissioner Kegel

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NATHANIEL ROBBINS HEADS CHALLENGE REFRIGERATOR CO.

Nathaniel Robbins has been elected president of the Challenge Refrigerator Co., Grand Haven Mich., succeeding H. F. Harbeck, who has been president of that concern for the past twenty-five years. Dwight Cutler, Detroit, has been named vice president and succeeds W. F. Harbeck. B. F. Harbeck was re-elected secretary and treasurer.

Three new members who were added to the directorate of the company are: B. P. Sherwood of Grand Haven, N. Robbins, Jr., and H. S. Robbins. Other members are: N. Robbins, Dwight Cutler, H. F. Harbeck, W. F. Harbeck and B. F. Harbeck.

WILLIAMS, AEBERLY, BRIGHT OFFER PLANS FOR SAFETY DEVICES

PROGRESS toward a new refrigeration ordinance for the city of Chicago came to another temporary halt Thursday, Aug. 22, when the Health Committee of the City Council adjourned its code hearings until such time as the industry could get together with Health Commissioner Kegel, and meet his demands for safety. No date was set for the next hearing.

Although Senator Essington, counsel for the manufacturers and Glen Muffy, spokesmen for the special industry committee, declared that no hope for reconciliation between the two forces remained; and although the Commissioner asserted also that it seemed impossible for the factions to reach an agreement, the Aldermen insisted that a definite ordinance, representing a correlation of all the diverse interests concerned, be submitted to them before they could take action.

From the tone of the debate between the Aldermen, the Health Department, the Boiler Department, and the special industry committee in the Thursday meeting, the Gearon ordinance (to which the industry has been pinning its hopes and confidence) appeared to have lost ground. Conversely, Commissioner Kegel, who is fighting for a code which the industry finds objectionable, seemed to have strengthened his position.

Kegel Gains Strength

Two weeks previously the Boiler department had the situation well in hand, with the Gearon ordinance passed by the subcommittee, and with the Health Commissioner supporting a brand new ordinance which industry representatives asserted was not practicable. In the last hearing, however, the Commissioner appeared to have won over the support of several Aldermen, and confidently told the Committee that he was prepared to present evidence showing that it was possible to devise multiple systems which could conform to his "yardstick of safety."

The industry committee gained a point when Chairman Moran refused to allow three new schemes for satisfying the Kegel ordinance to be presented for the appraisal of the Health Committee.

These plans were offered by E. T. Williams. (Concluded on Page 2)

CAMPAIGN EMBLEM



The symbol of food safety shown above will be featured in all promotional activity of the National Food Preservation Campaign which gets under way during the month of September.

COPELAND REPORTS \$297,251 PROFIT IN JAN.-JULY PERIOD

Copeland Products, Inc., Detroit, reports net profits of \$297,251.90 for the seven months period ending July 31, equal after taxes, depreciation and the setting aside of liberal reserves to \$2.63 per share on the A stock and to 13 cents on the B stock. This compares with \$2.52 per share on the A stock in the like period 1928, according to E. H. Brown, treasurer. Net for July was \$30,309.42.

"Indications are that remainder-of-the-year business will show substantial increases over the same period of 1928," declares W. D. McElhinny, vice-president in charge of sales. "Copeland's sound manufacturing and sales policies have been strongly reflected in the company's steady growth. A splendid sales organization, comprising approximately 2,000 outlets in the United States and 25 foreign countries, has been built to care for current business needs and the ever increasing demand for electric refrigeration."

Food Preservation Story Is Strikingly Depicted In Arresting Display by British Concern



How electric refrigeration halts the attack of bacteria on foods is vividly portrayed by Frigidaire, Ltd., London, England, in the window display reproduced above. In it the horsemen—Death, Disease, Pestilence, etc., are halted by the bacteria-resisting cold of the electric refrigerator. The large sign reads, "Frigidaire Arrests the Onslaught of Disease."

KELVINATOR, G. E. AND FRIGIDAIRE SCHEDULE FOOD SAFETY TALKS

Over 600 Cities and Towns Organized for September Drive

EXTENSIVE preparations are being made by the General Electric Co., Frigidaire Corp. and Kelvinator Corp. for their radio broadcasts which will carry the message of the National Food Preservation Campaign to millions of people in this country.

The periods set for the broadcasts of these firms mentioned above are: General Electric, each Saturday, 8:00 to 9:00 p. m., over stations WEAJ, New York; WEEL, Boston; WJAR, Providence; WTAC, Worcester; WCHS, Portland; WFI, Philadelphia; WRC, Washington; WGY, Schenectady; WGR, Buffalo; WCAE, Pittsburgh; WTAM, Cleveland; WWJ, Detroit; WSAI, Cincinnati; WLS, Chicago; KSD, St. Louis; WHO, Des Moines; WOW, Omaha; WDAF, Kansas City; KSTP, Minneapolis-St. Paul; KOMO, Seattle; KHQ, Spokane; WEBC, Duluth-Superior; WRVA, Richmond; WBT, Charlotte; WJAX, Jacksonville; WHAS, Louisville; WSM, Nashville; WSMB, New Orleans; WAPI, Birmingham; WMC, Memphis; WSB, Atlanta; WKY, Oklahoma City; WBAP, Dallas; KPRC, Houston; WOAI, San Antonio; KOA, Denver; KSL, Salt Lake City; KPO, San Francisco; KGO, Oakland; KFI, Los Angeles; KGW, Portland, Oregon.

Frigidaire, each Monday evening, 8:30 to 9:00, over stations WEAJ, New York; WEEL, Boston; WTIC, Hartford; WJAR, Providence; WTAC, Worcester; WCHS, Portland, Me.; WLIT, Philadelphia; WRC, Washington; WGY, Schenectady; WGR, Buffalo; WCAE, Pittsburgh; WTAM, Cleveland; WWJ, Detroit; WGN, Chicago; KSD, St. Louis; WOC, Davenport; WOW, Omaha; WDAF, Kansas City; WJAX, Jacksonville; KSTP, Minneapolis; WTMJ, Milwaukee; KOA, Denver; WHAS, Louisville; WSM, Nashville; WSB, Atlanta; WBT, Charlotte; KSL, Salt Lake City; WFAA, Dallas-Ft. Worth; KPRC, Houston; WOAI, San Antonio; KGO, Oakland; KPO, San Francisco; KFI, Los Angeles; KGW, Portland; KOMO, Seattle; KHQ, Spokane.

Kelvinator, Tuesday, Wednesday and Thursday mornings, starting Sept. 10, 10 a. m., over the Blue Network, the stations are: KDKA, Pittsburgh; KYW, Chicago; WBA, Boston; KWK, St. Louis; WBZ, Springfield; WREN, Kansas City; WJZ, New York; WJR, Detroit; WLW, Cincinnati; WHAM, Rochester; WBAL, Baltimore.

National advertising is under way, the opening shot being fired in the August issue of the *Cosmopolitan* magazine. This advertisement was followed by one in the September issue of *Good Housekeeping*, which appeared on newsstands on August 24. In addition, other advertisements are scheduled for the Sept. 7 issues of the *Liberty* and *Collier's* and the September issue of the *Pictorial Review*. Two page advertisements will run in the Sept. 7 and 14 issues of the *Saturday Evening Post*.

Promotion material is being shipped rapidly to local councils and every effort is being made to get all material ordered on or before August 12 in the hands of local chairmen before September 1. Contest booklets and milk bottle jackets for use in the drive are being printed at the rate of 550,000 and 400,000, respectively, per day.

More than six hundred cities and towns report that they are organized for the September campaign. M. E. Skinner, regional director No. 3, in charge of New York state outside of New York City, held a meeting of key men named to work in various sections of the state, at Syracuse, August 16.

In the Southern states the ice industry is taking an active part in the organization work. J. B. Mahoney, general manager of the Southern Ice Co., Charleston, has been named state chairman for South Carolina and a larger number of participating cities are already organized. In Georgia the ice men are also active in the preliminary work. Heads of women's clubs in Columbus, Ga., held a meeting and pledged active cooperation with the local council.

The Cleveland Council has enlisted the support of the barbecue stands of that city. These stands have agreed to display a paper cut-out of a milk bottle about five feet high, with a thermometer, with the 50-degree mark stressed, painted the full length of the bottle. A statement will also be used on the sign, which will tell the public that all milk served by this barbecue is kept at temperatures below 50 degrees.

"Cash In" With KELVINATOR in September—the National Food Preservation Month



TO dealers now handling Kelvinator Electric Refrigeration and to progressive merchants planning to enter this profitable field, the coming month offers exceptional opportunities for sales.

September has been selected for a tremendous drive on electric refrigeration prospects. A nationwide advertising campaign will bring home forcefully to millions of magazine and newspaper readers, the dangers of inadequate refrigeration of foods.

The slogan of this campaign "Why 50 Degrees Is the Danger Point," will be heralded throughout the country on billboards as well as through the mediums of newspaper publicity and advertising.

Thousands of home owners—heretofore content with "back-porch" or "window-sill" refrigeration will be jarred out of old habits and reach the buying point on electric refrigeration.

Kelvinator, with the greatest number and variety of domestic units in the industry, has the ideal background for just such an opportunity. You can reach out for this business with a line of tested and reliable electric refrigerators, priced as low as \$175 for the average family to the de luxe all-porcelain models for the finest homes.



ALWAYS SAFE BELOW 50°

Public recognition of the greater values offered by Kelvinator in its 1929 line is reflected in the largest sales in Kelvinator history.

And Kelvinator is backing up its dealer organization by the most comprehensive selling aids in its history—national and outdoor advertising, literature and a thoroughly trained and competent field force.

Decide now to share in Kelvinator's profits for September and throughout the coming year. Your territory may still be available. Write or wire for details and literature describing the entire Kelvinator domestic and commercial line.

KELVINATOR

Kelvinator Corporation
Detroit, Mich.

We Endorse the National Food Preservation Campaign for September

Latest Chicago News

(Continued from Page 1, Column 3)

Liams of Servel Inc., New York, J. J. Aeberly of the Chicago Department of Health, and George B. Bright, veteran Detroit refrigerating engineer and past president of the A. S. R. E. Mr. Aeberly came to the meeting prepared with diagrams and drawings of his proposed new type of multiple system, but had no opportunity to demonstrate his ideas.

As usual, Commissioner Kegel was the principal speaker of the day. During the course of a series of oratorical efforts he attacked the industry committee, charged the members with displaying bad faith and with being opposed to safety, reiterated his belief that his ordinance was workable, spurned all thoughts of compromise, and declared that he would "fight it out along this line if it takes all winter."

Essington Answers Charges

Amiably and without rancor Senator Essington and Glen Muffly rose to refute the sharp attack of the Commissioner. Senator Essington assured the Aldermen that the special industry committee had "sincerely and earnestly and in all good faith" been working to produce a code which would insure safety, that they had been ready and willing to cooperate with the Aldermen and the various departments at all times, and that the Kegel code was opposed solely because it provided for something which would not work.

Mr. Muffly answered the Commissioner's accusation that the industry was seeking economy rather than safety by saying that after all it was the consumer who must bear additional costs, and that any system which might be devised to meet the Kegel requirements would necessarily be so prohibitive in cost that nobody would buy it. He also pointed out how imperative it is that all new engineering schemes be tested over a long period of time.

Until this last meeting most of the Aldermen seemed to be in sympathy with the industry committee in its attempts to secure safety through a code buttressed with provisions for mechanical safeguards. To this hearing, however, came Alderman Arthur F. Albert to announce in no uncertain terms that he would support the Health Commissioner in any stand he might take. It was Alderman Albert's first appearance at a Committee hearing. Alderman Eaton, was also very much in the picture as he defended the Health Department code; and Alderman Massen made a few remarks to the effect that the "industry owed the people of Chicago a great deal" because of the great number of poor installations which he said he had seen.

Massen Cross-Examines

Alderman Massen also assumed the role formerly taken by Alderman Ross, that of the pertinent, persistent cross-examiner. Alderman Ross, who has done so much on previous occasions to aid the industry cause by his sarcastic and pointed questioning of Health Department officials and friends, was comparatively silent at this hearing, while Alderman Massen cornered Mr. Gearon of the Boiler Department and Senator Essington several times with his interrogation.

Ever friendly toward the industry in its fight for liberal legislation in regard to multiple systems, Alderman Sloan helped defend the Gearon code and tried to stop the Commissioner's assault upon the industry committee. He was aided somewhat by Aldermen Taylor and Ringa, although the former was not so stout a defender of the industry as he has been in the past.

Other members of the Health Committee, with the exception of the Chairman, said little or nothing, and did not indicate toward which side they might lean. Chairman Moran tried to preserve order, and repeatedly insisted that the groups should cooperate further to produce a working agreement which could be submitted to the Health Committee for approval.

Hearing Reaches Impasse

The hearing quickly reached the impasse which has marked previous meetings. At its beginning Chairman Moran called upon J. J. Aeberly of the Department of Health to relate the results of his conference with Mr. Muffly on the former's scheme for a new type of multiple system. The previous hearing of the Health Committee had adjourned in order that Mr. Muffly might be given an opportunity to study Mr. Aeberly's plan to meet the Kegel tests. Mr. Aeberly was forced to admit that he had not been able to convince Copeland's chief engineer of the feasibility of the plan.

Alderman Sloan at once called for an adjournment until the Health Department and the industry could find themselves on common ground. Dr. Kegel advised Alderman Sloan that he would not abandon his ideas of safety, and that he did not think that the two factions could reach an agreement. He offered, however, to submit the whole question to "unbiased engineers and chemists."

Next on the program was Alderman Albert. Expressing complete confidence in Commissioner Kegel as "one of the best cabinet officers the Mayor has put in office," he declared that the Health Committee should be loyal to its own administration, no matter what the question might be.

Senator Essington replied to Commissioner Kegel's attack on the honesty of the industry committee, and reiterated his committee's stand, that if a "refrigerating system is mechanically safe, it will be safe from a health standpoint."

Taylor Voices Opinions

After a preliminary flare-up with the Commissioner, Alderman Taylor restated his belief that the benefits of electric refrigeration should be made so cheap that they could be extended to everyone. Commissioner Kegel explained that he was simply trying to limit leakage should an accident occur.

A second time Alderman Albert contended that the Commission deserved the support of the Council, but found Senator Essington, Mr. Gearon, and Aldermen Sloan, Ross and Ringa ready with replies. Both Gearon and Ringa favored postponement of action, and a paragraph-by-paragraph comparison of the two codes by the Health Committee.

Muffly Speaks

Came then Mr. Muffly with his remarks on the necessity of complete and thorough testing of all schemes before marketing or legislation could be possible. Aldermen Sloan, Ringa, and Ross followed with a quizzing of the Commissioner on his attitude regarding the multiple systems already in use. Dr. Kegel agreed that only relative safety could be secured in such cases.

Dr. Kegel strengthened his position by reading a resolution from the Illinois State Board of Health commending his ordinance, and recommending the increased use of refrigeration. He then introduced City Engineer Gayton, who expressed himself as favoring multiple systems only if possible leaks could be limited to amounts not dangerous to health. No further testimony being available, the meeting was adjourned.

Illinois Board of Public Health Endorses Kegel Ordinance

WHEREAS it has been brought to the attention of the Illinois Board of Public Health Advisers that a considerable number of people in Chicago have been poisoned—some fatally—by gases which have escaped from domestic refrigeration installations. Therefore be it resolved

First. This Board favors the wider use of refrigeration especially for the better keeping of food in homes. They hold that health departments should promote the use of such appliances or the use of ice or other means of refrigeration until such time as means of refrigeration shall be as commonplace in the homes as stoves, lights, pantries and beds now are.

Second. Moreover, that refrigeration appliances using refrigerating gases may come into general use and that they may not endanger the health or lives of the people this Board endorses the standards of safety and the method of applying those standards found in the ordinance entitled "An ordinance for the purpose of regulating domestic refrigeration," proposed by Dr. Arnold H. Kegel, Health Commissioner of Chicago, and now pending in the city council of Chicago.

Third. This Board recommends that other cities in Illinois adopt ordinances regulating domestic refrigeration which follow the principles of the proposed Chicago ordinance above referred to.



Now—More Than Ever the SPARKLET Syphon Is a Proven Utility

For automatic refrigerator owners everywhere! It appeals equally to Mother, Dad and the children. And naturally so because *it serves a multiplicity of purposes*. SPARKLETS, to all in the Refrigeration Industry, are almost indispensable in creating greater customer satisfaction and contact; also attracting countless new friends for automatic refrigeration.

Purity and Healthfulness Together with Preservation and Economy

Purity and health are to be found in "The SPARKLET Method of Aerating" beverages, ice cream and waffle batter—by means of CARBON DIOXIDE, the therapeutic value of which has been definitely established by scientific health authorities. Liquids or mixes, aerated by and tightly sealed in a SPARKLET Syphon, are *preserved* for days in the case of mixes; for months in the case of beverages—that is, when kept in proper refrigeration temperature.

The SPARKLET Syphon is economical both as to first cost and cost of operation! It is surprisingly low-priced. *Economy* in operation is clearly revealed by the over-runs produced by "The SPARKLET Method of Aerating" home ice cream mixes and waffle batter. Then, consider the *economy* of carbonating beverages at home—just one instance being that of perfectly charged sparkling water at but 12½ cents per quart.

Moderately Priced to Insure Quick Resale to the Public

The forward-looking sales executive cannot help but view the SPARKLET Syphon in the light of a valuable utilitarian addition to *automatic refrigerator equipment*—the physical expression of a Home Service he should render every customer. You can afford to invest in SPARKLETS. They are low in cost, in spite of the fact that they provide the most in utility that money can buy.

Syphon \$7⁰⁰
ea.

Bulbs \$1⁵⁰
per box of 12

The SPARKLET Syphon is NOT a "One-Purpose" Device

As the Automatic Refrigerator increased the efficiency and demand for SPARKLETS, by means of proper and uniformly maintained temperature, so can SPARKLETS increase the merchandising and selling facilities at the command of the Refrigeration Industry. The SPARKLET Syphon is unexcelled for:—

- 1 Carbonating, *purifying* and simplifying the making of ice cream sodas and an endless variety of beverages *in the home*, including Sparkling ades—effecting savings sufficient to pay for Syphon in a few months' time.
- 2 Aerating, *purifying* and increasing the volume of ice cream mixes made *in the home*. And economizing to an almost unbelievable degree.
- 3 Aerating, *purifying* and increasing the volume of waffle batter—making delicious, light, fluffy, French waffles; also affording a clean, sanitary method for *preserving* unused batter for days.

The SPARKLET Syphon is NOT an ice cream freezer! But it aerates, *purifies* and substantially increases the volume of the home ice cream mix. It requires *AUTOMATIC REFRIGERATION*, maintaining uniform temperatures, to do the freezing—EXACTLY AS IT SHOULD BE.

In Appreciation SPARKLETS owes much to Home Economists, the country over, for the liberal attitude which has actuated them to offer valuable suggestions and guidance. Therefore, this public expression of appreciation. We know now that the success of any household utility depends, to a greater extent, upon the experience of practical home makers.

To Home Economists In urging your continued study of the uses of CARBON DIOXIDE *in the home*, we solicit your frank and candid opinions. If, at any time, we can furnish scientific data on this important subject, please feel free to call upon us. All references to purity and healthfulness in this advertisement are based on the findings of an eminent scientist.

To correct any wrong impression SPARKLETS, Inc., has never been represented by a National Distributor. Nor do we now operate through the medium of exclusive National or local Distributors.

SPARKLETS

INCORPORATED

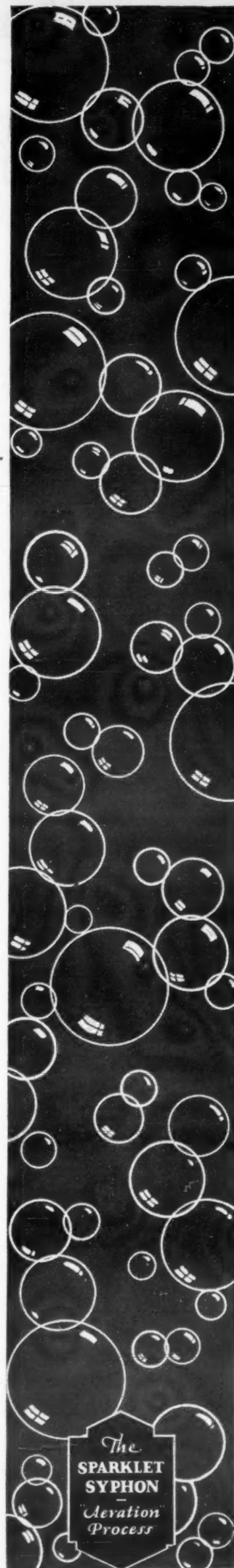
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COUPON

SPARKLETS, INC.,
19 West 44th Street,
New York, N. Y.

Send us detailed information showing how the SPARKLET Syphon can be used to sell more automatic refrigerators for us; also samples of your sales and merchandising helps.

Company Title
By Address
City
We handle Refrigerator
We sold until to
date, this year.
We are distributors
dealers



Conflict of Opinion Marks Chicago Code Hearings

GALLERY APPLAUDS KEGEL IN DRAMATIC COMMITTEE SESSION

Commissioner Stages Big Show
At Aug. 15 Meeting

DAZZLING oratorical pyrotechnics, dramatically staged, greeted the members of the Health Committee of the Chicago City Council when they met in the Council Chambers at 10:30 o'clock Thursday, August 15, to discuss proposed refrigeration ordinances for Chicago.

Health Commissioner Arnold H. Kegel had entire charge of the morning program, and directed a show which began with a report on refrigerants by a toxicologist, had its climax in the asphyxiation of a guinea pig with sulphur dioxide, and concluded with a plea for the quieting of fears and consideration of Dr. Kegel's code by the nationally known health authority, Dr. Lena K. Sadler, who "represented the womanhood of Chicago."

Acting as interlocutor for a number of men in his department, who in turn presented their evidence on the subject, Dr. Kegel was roundly applauded by a gallery of women who filled the Council Chambers.

The entire morning was occupied by the testimony of Health Department officials and representatives, who had to face a withering cross fire from the Aldermen. In the afternoon the Boiler Department was heard, as was Senator Essington, representing the manufacturers, and George Bright, representing the Chicago District Ice Association.

Toward the close of the afternoon the session was enlivened by a debate between Glen Muffly, Copeland Products, Inc., Detroit, and E. T. Williams, Servel, Inc., New York, over the workability of the latter's idea for a multiple system which might conform to the Kegel tests. The two illustrated their points with chalk on a blackboard. The Health Department's Mr. Aeberly also announced that he had a plan whereby multiples could be installed in accordance with Dr. Kegel's proposed regulations.

After a preliminary skirmish, in which Alderman Taylor found opportunity to criticize the Kegel code, the Commissioner rose to present the case of the Health Department, and to introduce Dr. W. D. McNally, consulting toxicologist. The latter presented a paper of some length, discussing the nature and relative toxicity of the various refrigerants in use, and reviewing cases of refrigerant poisoning which he had attended in Chicago.

Immediately upon the conclusion of his talk, Dr. McNally was cross-examined in detail by peppery Alderman Ross, and for the first time during the hearings the short, white haired alderman (who is also a practicing physician) met his match in an open-floor duel. Alderman Sloan and Taylor thrust pointed remarks in Dr. McNally's direction at every opportunity, but not once was the toxicologist caught off guard.

Next on the bill was Dr. Fred O. Tonney, director of laboratories and research in the Chicago health department. Dr. Tonney presented a clinical picture of the effects of refrigerant poisoning, and

then proceeded to perform the guinea pig experiment.

After the guinea pig had been subjected, in a glass-enclosed chamber, to a flow of sulphur dioxide for a long, silent moment, Senator Essington rose and protested against the exhibition. Quite willing to cease the experiment, Dr. Kegel ordered the gas turned off and had air introduced into the glass chamber. The little animal revived momentarily, but died after being removed from the room.

Wild applause greeted Commissioner Kegel as he followed up the experiment with an emotional appeal directed toward the women present. Order and the peace of mind of several of the Aldermen were restored with difficulty by Chairman Moran.

Dr. Alton S. Pope, Chief of the Bureau of Communicable Diseases, was introduced, and read a clinical report of all the cases of refrigerant poisoning which had occurred in Chicago during the past year.

Again the Commissioner grasped the opportunity to turn loose some appealing oratory. As the final witness for the prosecution he called upon Assistant Commissioner Koehler, who spoke directly to the Aldermen, pointed out the "common sense features" of the Kegel code, and asked for immediate action.

Fire Chief Patrick Egan took the stand in support of Dr. Kegel's position, and recalled trouble experienced in the past with ammonia systems. For a fitting finale, Dr. Lena K. Sadler, representing Chicago's women's clubs, plead for safety, allaying of fears, and the Kegel code.

After an adjournment for lunch, Gerald F. Gearon of the Boiler Inspection Department offered a short rebuttal of Dr. Kegel's testimony, and called attention to the safety features of his ordinance. Next came Senator Essington, counsel for the manufacturers, who reviewed the entire situation at considerable length.

Senator Essington was followed by George B. Bright, representing the Chicago District Ice Association, who talked about the Detroit code, expressed his belief that multiple systems could not be made safe, maintained that the term "electrical refrigeration" is a misnomer, and deplored the "deception in this matter."

Again the question of inspection was brought up, and the Aldermen haggled for some time with members of the Health and Boiler Departments before they got back to the principal question of the day: Is Dr. Kegel's ordinance workable?

Glen Muffly, Copeland's Chief Engineer, asserted that the Williams plan for a multiple system which might conform to the Kegel code would not work, and asked for a blackboard to prove it. Mr. Muffly entered into a long, non-technical discussion of the intricacies of multiple systems, and pointed out errors in the Williams suggestion.

In answer, Servel's E. T. Williams pointed out that Mr. Muffly had drawn his diagram inaccurately, and reiterated his position that it was possible to meet Dr. Kegel's requirements.

Mr. Aeberly of the Health Department announced that he had a plan for a multiple system which could conform to the Kegel tests. The Committee adjourned for one week in order to give Mr. Aeberly time to thrash out his scheme with Mr. Muffly and other members of the special industry committee.

KEGEL, POPE, MC NALLY REPORT INVESTIGATION OF METHYL POISONING

"Methyl Chloride Poisoning From Domestic Refrigerators," by Arnold H. Kegel, M. D., William D. McNally, M. D., and Alton S. Pope, M. D., is one of the leading articles in the August 3 issue of The Journal of the American Medical Association.

In this article is reported the clinical findings recorded by members of the Chicago Health Department who treated persons suffering from methyl chloride poisoning in the recent Chicago cases. The symptoms, blood tests, physical observations, diagnosis, treatment, and other data of like nature are recorded for seven cases.

An inclusive set of references and notes of similar cases reported elsewhere in America and in foreign nations is also included.

Dr. Kegel is Health Commissioner, Dr. McNally is Consulting Toxicologist, and Dr. Pope is Chief of the Bureau of Communicable Diseases of the Chicago Health Department.

Darius E. Peck Named G. E. Vice-President

Darius E. Peck, assistant manager of the law department of the General Electric Co., was elected vice-president and general counsel of the company at a meeting of the board of directors in New York on Aug. 1.

Muffly Explains Necessity of Testing New Engineering Ideas

Statement of Glen Muffly, chief engineer, Copeland Products, Inc., before the Health Committee of the Chicago City Council, Aug. 22.

AS a matter of fact it really does not cost the manufacturers more—it is the public that will stand it. If we add something to a system that costs money, we, of course, will have to add that to the cost to the public. We might at one time have made the statement that the thing was too expensive, but what we meant was that the price would be so high that the public would not want to buy it.

We sell both types of systems, most of us, and we would be better off financially if we only had to make one type; but the public needs refrigeration, and when we are able to give them something that will cost them less, more of them are going to receive the benefits of refrigeration.

Now as to these suggestions as to methods of accomplishing the requirements of Dr. Kegel's ordinance. We have had several suggestions, but so far not a single practical suggestion. I can say that a thing is impractical from two standpoints. It may be impractical because it will not work at all. We have had some suggestions that will not work at all. I have never made the statement that it is impossible to do anything. I think any engineer that makes a statement that a thing is impossible is very foolish. History of the last ten or twelve years has shown the doing of the impossible. It may be impractical today and practical tomorrow.

We have in our laboratories in all of our companies (and I speak for my own company with intimate knowledge) things that have been on test from six months to two years that we are not ready to release. Maybe we will never release them—maybe we will release them in a couple of months or in a year.

It is not possible for an engineer to take a new device and say positively that this thing will be satisfactory. We have very simple devices, much simpler than the suggestions that have been proposed.

We have in our engineering organization a lot of engineers, some very clever; they get up ideas. My desk is practically the clearing house for those ideas. I point out something about it, the reason why it won't work, etc. I say "make one up and let's see it run." It works all right for three weeks or three months, then something develops, we find something wrong. We then either correct that or we don't put it on the market.

This idea of inventing something today and putting it on the market tomorrow is all wrong. If we write an ordinance that is based on doing something that has not yet been proven in the laboratory and in field tests, it just won't be done, because the manufacturer would rather not get the business than go into production on something unproven.

ZEROZONE OFFERS

A Complete Line of Commercial Equipment

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Zerozone Refrigeration

ZEROZONE

A MODEL TO FIT EVERY KITCHEN

COMMERCIAL AND DOMESTIC REFRIGERATION That Insures You a Year Round Profitable Business

You will find in Zerozone a comprehensive line of compressors and cooling units—a unit to cover every refrigeration requirement from the smallest to the largest.

Zerozone can supply the exact model needed—either for commercial or domestic use—whether it be for market, grocery, confectionery store, florist shop, restaurant, hotel, club, hospital, apartment house or home.

Upon request we will send you literature and complete information regarding Zerozone. There are a few select territories still open for distributors. Write us today for details.

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Lifetime Refrigeration

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Ald. Eaton Flays Industry For Uninspected Multiple Systems

Statement of Ald. Charles S. Eaton before the Health Committee of the City of Chicago Council, Aug. 22.

IN other words, you are at the same bridge they all come to. You have to decide it. Alderman Sloan says when they get together, come in, but they never will get together. They have not got together in their own industry. For twenty years there has been a difference of opinion among them.

There are just two suggestions I am going to make. Mr. Gearon has told us that there are about 10,000 of these units. Of these 10,000 units only 2,000 of them had the decency to ask for a permit under the state law, so the industry went ahead and put 8,000 of them in without any permit. Furthermore, he says the accidents occurred in those that did not have permits.

Still they want to go on. They are not coming in making applications. I have had a number of letters from people in my ward about this. In this interval, are you going to have these other 8,000 who never had the decency to take out a permit come in and get one? There are 8,000 out that did not comply with anything. They just went ahead and put it in—took a chance.

Now in the meantime, are we going to tolerate the situation? If not, then we will have 10,000 licensed under the old law, no matter what ordinance is in effect.

Personally, I am not going to take a vacation, but if you gentlemen feel you

want to have a little rest and then come back and go over this thing, all right. I favor the Health Department—Alderman Albert and others favor the Health Department, while some of the Aldermen favor the Gearon ordinance.

WASHINGTON, D. C. CODE READY FOR COMMISSION

Engineers at Washington, D. C., have just completed a final draft for a set of proposed refrigeration regulations for the District of Columbia.

Copies of this draft have been distributed to various men interested locally, and it is reported that if no serious adverse comment comes from these men, the proposed regulations will be enacted by the Commissioners within the next fortnight.

The Washington code provides for multiple systems with 100 pounds or less of refrigerant, when used above the first floor of dwellings. Safety devices, pressure tests, supervision, ventilation, design, installation, and operating methods are all treated in the ordinance.

Paragraph 515, section 500, states: "No irritant refrigerant without a distinctive pungent odor shall be used."

The New Servel has BETTER sales points and more of them!

This household line goes a step further in refrigerator convenience. It makes your selling easier, your profits faster.

WHISPER-LIKE quietness... big, and fast, ice-making capacity... surprisingly moderate current consumption... absolutely dependable operation in any season and climate... unusual beauty of line and finish.

That's a lot to say about any refrigerator—but you can say it about the NEW SERVEL and you can't make it too strong!

This household line gives you a lot to talk about. It's just about the last word in improved refrigerator construction. It's right up to the minute in every basic feature.

Important Selling Points

It's in *refrigerator convenience* that the NEW SERVEL goes a step farther than most. It has many little refinements—that mean a lot to the housewife who has to use a refrigerator a hundred times a day. They save her work, save her trouble—and maybe that doesn't make a hit with any woman!

For instance, rounded inside corners—to make cleaning easy; a waist-high bottom shelf that saves stooping; shelves wide apart—that eliminate awkward tipping and twisting to get heaping plates in and out.

And there are lots more—perhaps you won't think they're important—but you ought to hear Servel dealers tell how these very details help put



sales over! They have a big appeal to women—and, after all, it's the woman who *must be sold*!

Models for every need

In addition, the NEW SERVEL line covers the refrigerator needs of every prospect. Models ranging from 5 to 10 cubic feet capacity—each making plenty of ice cubes up to 168 in the larger size at one freezing.

And every one's a beauty! All in the new 5-coat, baked-on finish that's absolutely chip-proof. And available in white or color. All hardware is chromium-plated, too.

A chance for live business men

To the progressive business man, the NEW SERVEL offers the biggest opportunity in the refrigerator field today. Write for the full details. It is worth while finding out about a product that gives you such an edge on competition.

Commercial business can be yours, too

Servel gives you a wonderful chance at commer-

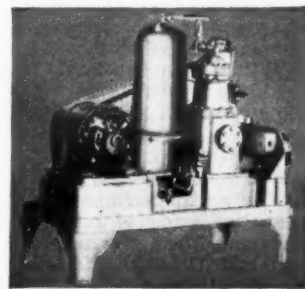
cial business, too. The Servel Commercial Line is so flexible, so easy to estimate on, so economical to install! It cuts costs at every point—selling, engineering, erecting, servicing.

For instance, there's the Servel CALCULATOR to help on engineering. It makes calculating so simple that a salesman can do most of his figuring *right in a prospect's office*.

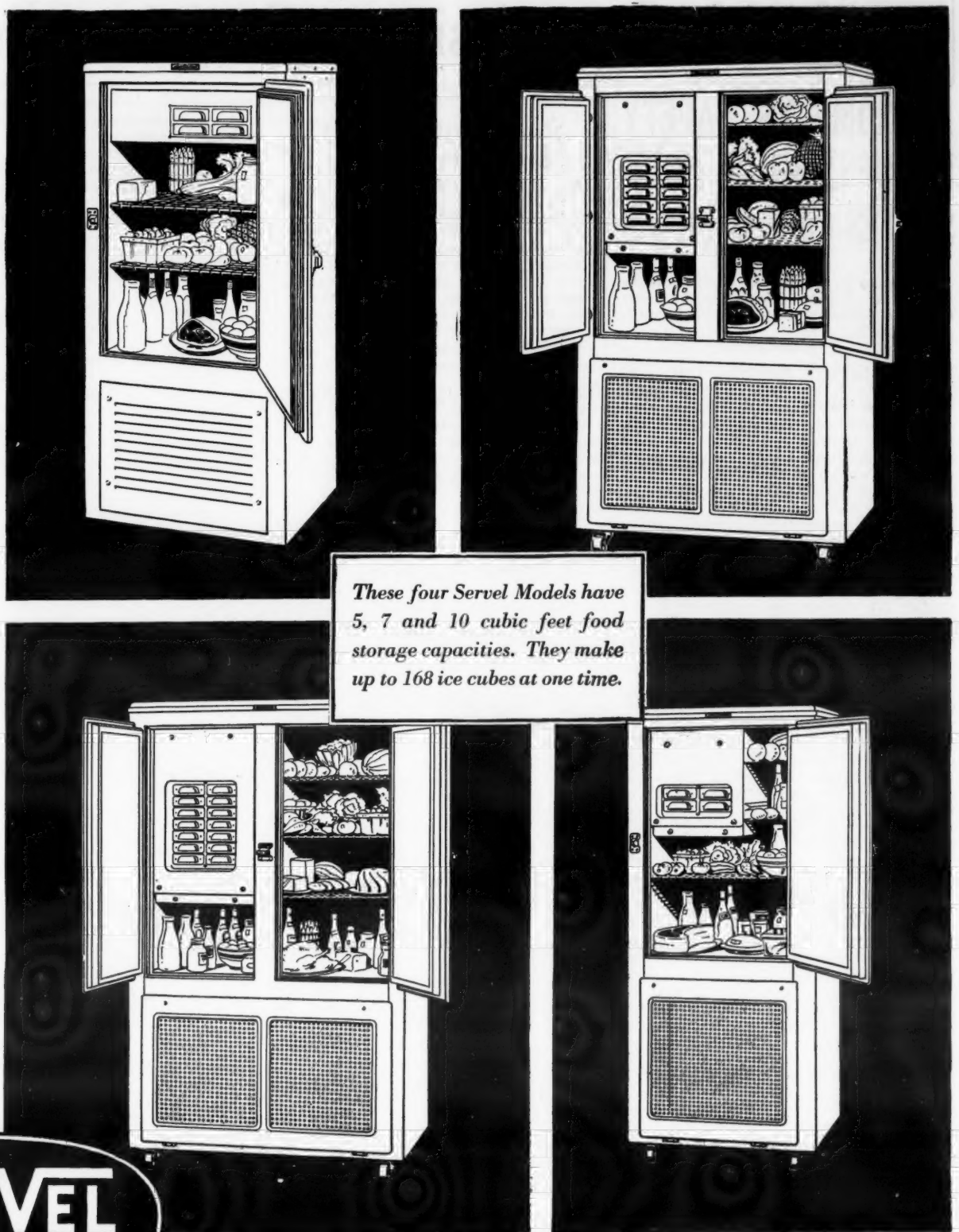
But the biggest feature is the new all-copper chilling sections. They are so flexible you can build up practically any installation from stock. No special coils are necessary. And the sections are so light that one man can erect almost any job.

This commercial business helps your domestic sales, too! In fact, dealers say that each is continually uncovering business for the other. And

it gives you a virtually year-round proposition, for there's nothing seasonal about commercial refrigeration! It's too much a matter of dollars and cents to the store owner who needs it!



Servel Compressor Model 100 A. W.



SERVEL SALES, Inc.

EVANSVILLE, INDIANA

Health Commissioner Explains His Viewpoint to Committee

ECONOMY VS. SAFETY IS QUESTION OF HOUR STATES CITY OFFICIAL

(Statement of Health Commissioner Arnold H. Kegel before Health Committee of Chicago City Council, Thursday, Aug. 22.)

FROM the very beginning there has been a vast difference of opinion concerning this matter, and concerning what safety consists of. The engineers, in the first place, assured me they could make this apparatus safe. When they demonstrated to me that their idea of safety was an unlimited amount of gas, and merely tightening a few nuts here and there, etc., I immediately found it necessary to abandon their idea of safety.

Then we considered the limiting of the amount of gas. Later we considered limiting or ruling out multiple systems entirely. We did not feel, however, in the Health Department that this was entirely fair and, therefore, we began to look around for a method where we could offer them a yardstick of safety.

This same difference of opinion has been promulgated all the way through. We do not feel in the Health Department that the industry wants to make any changes that will meet with the requirements the Health Department has laid down. The main objection is that it will be too expensive. We do not feel that there should be such an argument as economy versus safety.

Attitude of Department

At the last meeting here there were several things brought out. The industry stated that if a two and ten-pound limit, which the Health Department considered a margin of safety, could be demonstrated in a practical way they would be willing to comply with it. We took the attitude that it was not our place to show them how to make it safe, but to give them a yardstick of safety. Therefore, we developed this two and ten-pound limit. It developed entirely into a medical question.

As to why we were not able to get together, we do not feel that the engineers and certain members of the industry have been entirely fair in this matter. I think you saw a demonstration of this the other day, in connection with the discussion about Mr. Williams' apparatus. I have no doubt in my mind whatsoever that when Mr. Muffy, an outstanding engineer, saw that apparatus he recognized that that valve was in the wrong place, and if he were willing to see the matter in the right light he would have suggested that it was put in the wrong place by mistake; but on the other hand he chose to say to you gentlemen that it could not be done, and that Mr. Williams' demonstration was not practical.

I am going to say that they are not willing to see this in the light of safety, that they are going to pull in the other direction. Either the Health Department will have to abandon its measure of safety, or the industry will have to abandon its economy arguments. They will have to change something. They cannot let it go the way it is. There is no indication of the change toward safety.

Suggests Arbitration

The Health Department, at this time, I want to say, is willing, on account of certain expressions made that they were biased, to leave this matter to a group of unbiased engineers and chemists. We are perfectly willing to do that so as to overcome the opinion you gentlemen have that we are biased in one way or another.

We can continue arguing this way for a long, long time and never get anywhere. We feel that the apparatus Mr. Aeberly has meets with the requirements. It is true it is more expensive than the apparatus they have been putting in. It is true it narrows the margin of profit between multiple and single systems.

Each one of the unbiased engineers has stated that it is practical, that it can be made to work and that it is entirely safe; that not more than two pounds can leak in any apartment. I think it is up to you gentlemen to be the judge, or to leave it to a group of unbiased engineers and chemists.

I suggest you listen to the engineers and draw your own conclusions, because we will never get together with the industry. Two weeks ago they felt it was absolutely impossible, and there was no demonstration of any kind to show that the two and ten-pound limits were practical. We were taking entirely the health angle of it—how much gas could leak without injuring anyone. Today we have three very definite opinions, with plans drawn up, showing that it is feasible. I think that you are going to have to decide that either an economical question or safety is going to sway you in your opinion.

We agree that if it is possible to install an apparatus with every safeguard to prevent its leakage. It may not leak for a week, or it may not leak for a month or a year or two years; but maintenance of

Statement of City Engineer Gayton

IN my opinion, from my own experience as an engineer, I would not condemn multiple systems entirely. Some arrangement should be made so that the quantity of gas that could escape would not be dangerous. If it is possible to make them safe in that way, they should be allowed. If not, they should not be allowed.

these installations is the great difficulty in this matter. None of these apparatuses that caused the deaths and illnesses of these people leaked within a month or two months—it was after certain things had happened, after certain vibrations had taken place, after accidents had occurred.

There is no way in which any piping systems, whether water, gas or steam, can be prevented from leaking. Experience has shown that anything that contains anything which is leakable will leak. Everybody knows how often their steam-pipes leak. Certainly, they did not want them to leak.

We maintain this in the Health Department: that although you might be able to install them safely, you cannot maintain them safely.

Passing the Buck

Another thing, Senator Essington a moment ago said that the industry would like to have the installations supervised by the Health Department, and maintained by the Health Department. They want them inspected frequently. In other words, the attitude is this—they want to legalize these leaks and pass the buck of the leaks and deaths and illnesses to the Health Department.

There is no possible way in which my inspectors can go in and inspect a system and say it is not going to leak until I get around here the next time. In one hour this apparatus is liable to spring a leak. You cannot guard against all accidents.

It is agreed also that every refrigerant that is used in mechanical refrigeration is poisonous. We demonstrated that at the last meeting. We don't want to go all over that again. We are dealing with a death-dealing gas. The Health Department does not want these to leak. We don't want two pounds to leak. The industry does not want two pounds to leak. They are trying to mislead you and make you think the Health Department wants two pounds to leak.

We are providing that should an accident occur and should there be a leak, not more will leak than could injure anyone in that apartment or building. The Gearon ordinance provides for an unlimited amount of gas in a system, and if an accident happens, instead of two pounds leaking, one hundred and fifty times that amount will leak. In other words, 300 pounds can leak—enough to kill everybody in the apartment building.

Low Concentration

On the two-pound limit we went over this situation very, very carefully. We have struck an average of two pounds, which will produce a concentration so low that it will not kill. Of course, if somebody is going to turn this thing on and put their head in the ice-box and get a concentration that way, it will be dangerous and they will die; but with a gas that has an odor and leaks into an apartment of say 4,000 cubic feet and will not leak more than two pounds over a period of twelve hours, there is enough of a warning there so that those people in the building can get out. Even if they should not get the warning right away, they will still be able to get out.

If there is a baby or a sick person in that apartment and there is a small leak, someone will come in and take them out. You never leave a baby or a sick person alone very long.

Now, the Health Department has not depended upon its own opinion entirely, although we have some of the best chemists in the city. Dr. McNally, our toxicologist, is internationally known. He has solved problems more difficult than this one. We have 15 engineers in our Department who have been guarding your lives, you might say, for many years past. We have their opinion in this matter.

In addition to that as far as the head of our department is concerned, as far as the heads of our various bureaus are concerned, we have the opinion of the Fire Department. The Fire Department wants its fire-fighters protected. Therefore, they favor our ordinance, because they don't want unlimited amounts of gas to leak.

In addition to that we went further—we went to our City Engineer, whom we think a great deal of. He has been protecting us for many years. He is with us today. He states it is practical. Furthermore, he states he would not think of living in an apartment one night that had 300 pounds of a poisonous gas circulating throughout the building.

In addition to that we have architects, who have stated that for years they have not placed these multiple units in their

high grade apartment buildings because of the fear of leakage. These apartments that have been putting in these multiple units in a great many cases have been the so-called speculative apartments—they wanted something cheap.

We feel that our ordinance will stimulate the use of multiple systems, because they will be safe. They will be as safe, perhaps safer, than the single units on account of the amount of gas that can leak.

The question of economy is the thing that is going to settle this matter finally—economy vs. safety. Every other industry in the world in its youthful days has had to be regulated in some way or another in order to make it safe for those working in that industry and to safeguard those that are using the apparatus.

Here is an industry that wants to get out of it. They know better. These engineers at the present time are taking a viewpoint of their industry—not the viewpoint of safety. We have been trying to drive it home to them that it is a question of safety.

You have a precedent set in the city of New York. Certainly, the opinions of these engineers were not taken in New York City. The ordinance in the City of New York was passed over their heads. They fought like tigers, but the City of New York realized that their people must be safe-guarded and it is the same duty that is up to you. After all you cannot blame them. They are fighting for their industry, for the money they can make for their stockholders.

It is your duty to safe-guard the lives of our people. Certainly the Health Department is going to fight to the limit for public safety. We do not feel that 300 pounds in any building is a safe measure.

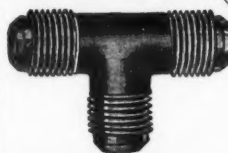
Three Aids To Better Joints

Imperial Tube Cutter

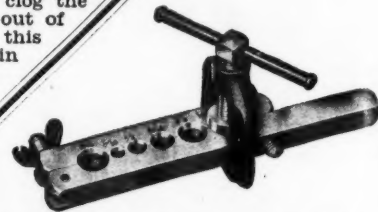


Here is a highly efficient tool for cutting copper, brass, block tin and lead tubing. It takes all sizes of tubing from 1/8" to 3/8" and makes a right-angle cut, quickly and cleanly, leaving no burrs or chips to clog the line. The tubing does not become out of round as when put in a vise. When this tool is used, tubing can be cut in half the time required by old methods and a far better job results. No. 94-F Tube Cutter, each

Brass Forgings



\$2.50



Imperial Flaring Tool

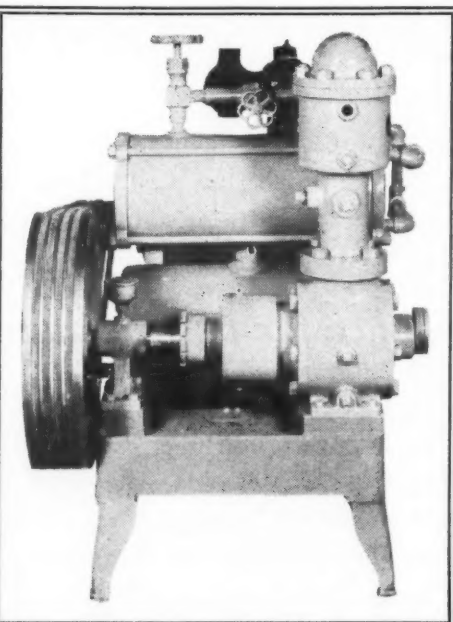
The Imperial Flaring Tool gives the proper flare and taper to the tubing for making up joints. A perfect flare means a tight joint, and this tool does the work in the least time and with the utmost simplicity. No loose dies—no vise necessary. No. 93-F takes tubing sizes 7/16", 3/16", 1/4", 5/16", 3/8", and 1/2", each \$3.00. No. 95-F takes tubing sizes 1/4", 5/16", 3/8", 1/2" and 5/8", each \$4.00.

Accurately made to meet all the requirements of Iceless Refrigerator Manufacturers. Will not leak. Let us quote on your requirements.

IMPERIAL BRASS MFG. CO., 565 So. Racine Ave., Chicago, Ill.

In Between the 2 Big Markets Household and Industrial

REFRIGERATION



Single Cylinder

BETWEEN the Household and Industrial Markets there is an immense field for commercial refrigeration. Drug stores, markets, restaurants and many other lines of business are confronted with refrigeration problems that can be solved only with equipment designed to meet the requirements of each individual case.

DoleCo Units are built in eight sizes, with capacities from 250 to 4000 pounds. They require a surprisingly small amount of space. Ammonia, used as a refrigerant, insures highest efficiency at lowest operating cost. DoleCo equipment has a well earned reputation for freedom from service and repairs.

More Letters From Our Dealers:

"We have obtained unusually good results from the many DoleCo units we have installed in this territory, and do not hesitate to recommend DoleCo equipment very highly."

(Signed) R. T. Ferrin Co.
124 Third Avenue North
Minneapolis, Minn.

"Our experience with Dole Refrigerating machines has shown us that they are constructed of the best available material and give excellent service. We believe that DoleCo is destined to become a leader in the commercial field as

this machine is particularly adapted to this market."

(Signed) E. E. Brown Company
26 Lancaster Street
Boston, Mass.

"We are pleased to say that our installations are very satisfactory and we believe the Dole compressor to be the equal of any on the market in the commercial sizes. One of the machines we sold replaced another make and the customer reports very much lower temperatures, shorter periods of operation and less water consumption."

(Signed)
Lyons Electric Refrigerator Co.
88 Front Street
Worcester, Massachusetts

Valuable franchises are still available in territories where we are not represented. We wish to communicate with aggressive dealers having sales organizations experienced either in refrigeration or similar lines. For them we have an excellent proposition.

Dole Refrigerating Machine Co.

1209 W. Washington Boulevard

Chicago, Illinois

Four United States Bureaus Defend Refrigeration Systems

A NUMBER of deaths which have occurred recently in Chicago have been attributed to poisoning by methyl chloride which leaked from refrigerating systems. These have received wide publicity, and appear to have caused apprehension, especially among the users of refrigerating equipment entirely unlike that to which the fatalities have been attributed. It is the purpose of this statement, authorized jointly by the Public Health Service, the Bureau of Standards, Bureau of Mines and the Chemical Warfare Service of the War Department, to state the essential facts regarding this danger and to relieve any undue anxiety of those possessing household refrigerating systems.

All refrigerating systems in practical use depend for their operation upon the

repeated gasification and condensation (sometimes by dissolving or "absorbing" in another substance) of a material which is technically called a "refrigerant." In most cases the refrigerant is confined under pressure in the refrigerating machine and, if it escapes from the system, becomes a gas which mixes with the surrounding air.

For many years the gas ammonia was used almost exclusively as a refrigerant. For technical reasons, other refrigerants have more recently been introduced and are now extensively employed. Sulphur dioxide and methyl chloride are the most important of these.

None of the three refrigerants mentioned, ammonia, sulphur dioxide or methyl chloride, can be breathed with impunity, but none are violent poisons

when breathed for a short time in low concentrations.

If the same amount of the three substances is considered, methyl chloride is probably the least poisonous of the three; but because their physiological effects are quite different it is hard to make a quantitative comparison. Sulphur dioxide and ammonia both have strong odors which are easily recognized and are so irritating that no one is likely to breathe much of them if escape is possible. Methyl chloride has only a slight and rather pleasant odor, which would not be likely to awaken a sleeping person and might not be recognized by one who was awake. To this fact is to be attributed any greater hazard from methyl chloride than from other commonly used refrigerants.

Most of the trouble attributed to methyl chloride has occurred in connection with unified systems installed in apartment houses in which a single compressing unit delivers the refrigerant through tubes to the refrigerators in the several apartments. A large majority of

the individual household refrigerators of the motor driven ("electric") type now in use employ sulphur dioxide as the refrigerant. Nearly all, if not all, of the domestic refrigerators, the operation of which depends upon supplying heat instead of mechanical compression, use ammonia. This class includes a few electric refrigerators of unusual type and all of the gas-fired refrigerators. The escape of the refrigerant from any of the more commonly used household refrigerating systems would, therefore, be at once made evident by its odor. Newspaper headlines and statements to the effect that the fatalities in Chicago were caused by "gas refrigeration" without doubt had reference only to the fact that refrigerants are gases. "Illuminating" or fuel gas was in no way involved.

In no case is the contamination by a refrigerant of food stored in the refrigerator to be feared. Only minute amounts of the very volatile refrigerants might be retained in solution in moist food, and no refrigerant in use is sufficiently poisonous to have any detectable effect

when taken into the stomach in such small quantity.

Methods for eliminating the danger of further deaths from the methyl chloride systems are being studied. It would be premature to say whether the end will be accomplished by replacing methyl chloride entirely by other refrigerants, by adding something which will give the refrigerant a sufficiently powerful odor, or by so improving the mechanical construction of the equipment that leakage will not occur where the gas might enter rooms in which people live.

It should be recognized that the number of serious accidents from household refrigerating systems has been small in comparison with the number of such systems in use, and improvements may be expected which will much reduce the small hazard that does exist. People should not deny themselves the benefits of this important item of household equipment because of a distrust of its safety. Most of us do not forego the use of the automobile because of the much greater hazard of traffic accidents.

CONTROLLED CIRCULATION

A NEW and Outstanding Achievement in Electric Cabinet Construction

For Cross-Fin-Coil Installations

AN ENGINEERING TRIUMPH

The Air Circulation Control feature of the New Belding-Hall Commercial Cabinets for electric refrigeration is undeniably the greatest advancement in cabinet construction in many moons. An achievement that pays a glowing tribute to the skill and craftsmanship of Belding-Hall Engineers who, in months of painstaking research, experimenting and testing brought to light this new scientific means of forcing cold air to circulate CONTINUALLY and COMPLETELY.

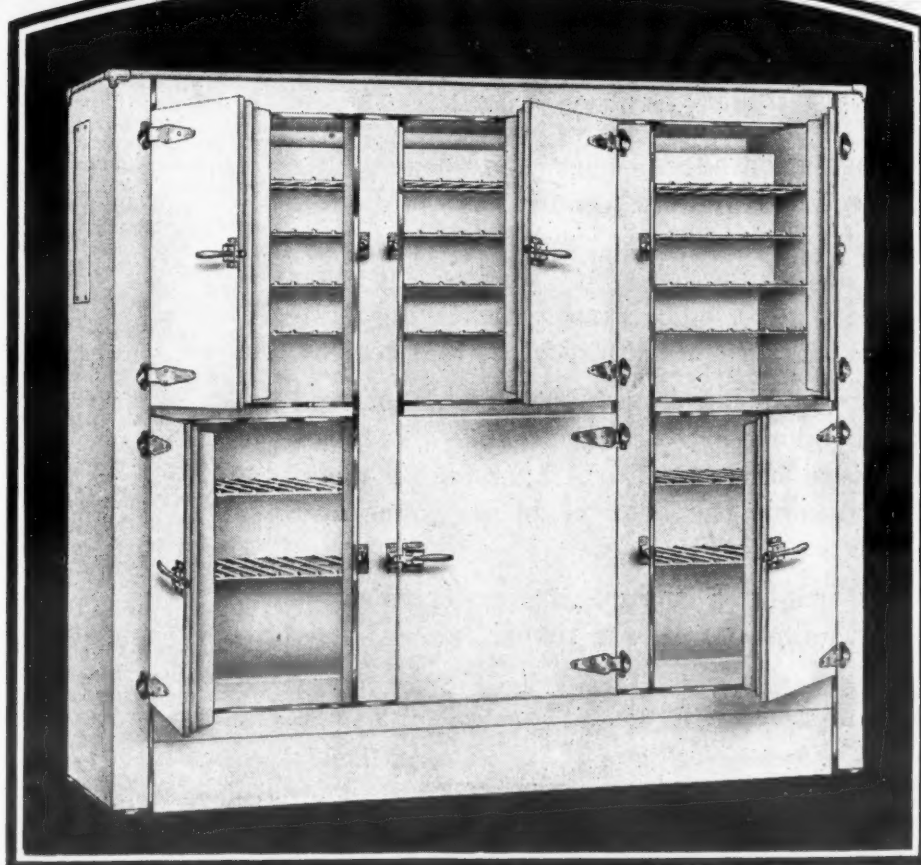
NOW AIR CIRCULATION IS POSITIVE AND COMPLETE

One of the major factors which determines the efficiency of mechanical refrigeration is proper circulation of air. Unless the cold air is controlled it does not completely circulate through the refrigerator, with the result that food placed farthest from the coils is not properly refrigerated.

The Circulation Control of the New Belding-Hall Commercial Cabinet literally "grabs" the cold air and "escorts" it COMPLETELY around the cabinet. There is only one way the cold air can travel. There is no chance for it to escape until it has properly circulated through the entire food storage area. This new feature now assures uninterrupted circulation under all weather conditions.

EXCLUSIVE FEATURE

This Controlled Circulation is exclusively a Belding-Hall feature. There is nothing like it anywhere. It is just what the Electric Refrigeration In-



dustry has been waiting for. Leading Electric Refrigeration Engineers and Specialists in Commercial Refrigeration, were consulted during the designing of these cabinets. They all proclaim this new

circulation control feature the FINEST and MOST positive method of applying Electric Refrigeration to Commercial Installations. Truly a big step forward in mechanical refrigeration.

These new cabinets can be had in All-Poreclain—Lacquered Steel—or Oak Cases.

THE ABOVE TYPES ARE FURNISHED IN:

- 3 or 4 door construction of 44 cubic feet capacity.
- 5 or 6 door construction of 68 cubic feet capacity.
- 5 or 6 door construction of 81 cubic feet capacity.

FOR CROSS-FIN COIL INSTALLATIONS

The New Belding-Hall Circulation Control Cabinets are designed especially for Cross-Fin Coil and Zero tube Cooling. There is a special, and scientifically constructed compartment for the coils. These cabinets are built to allow quick and easy installations of the coils and are provided with end doors to permit easy access to the coils at all times.

INCREASES EFFICIENCY OF UNIT

Belding-Hall Circulation Control reduces materially the operating time of the unit. And obviously the unit operates with much greater efficiency.

BELDING-HALL CAN SUPPLY ANY TYPE OF CABINET WANTED.

Some Unit Manufacturers require cabinets of special design and construction. The unlimited resources and vast manufacturing facilities of Belding-Hall permits manufacturing to order at volume prices.

LARGEST PLANT IN THE WORLD.

Belding-Hall Company have the largest plant in the world devoted exclusively to the production of Steel and All-Poreclain Cabinets for the electric refrigeration trade. Belding-Hall builds cabinets for the leading manufacturers of electric units year after year.

Get the complete facts about the new Belding-Hall Circulation Control, Commercial Cabinets.

BELDING-HALL CO., Commercial Division, BELDING, MICHIGAN

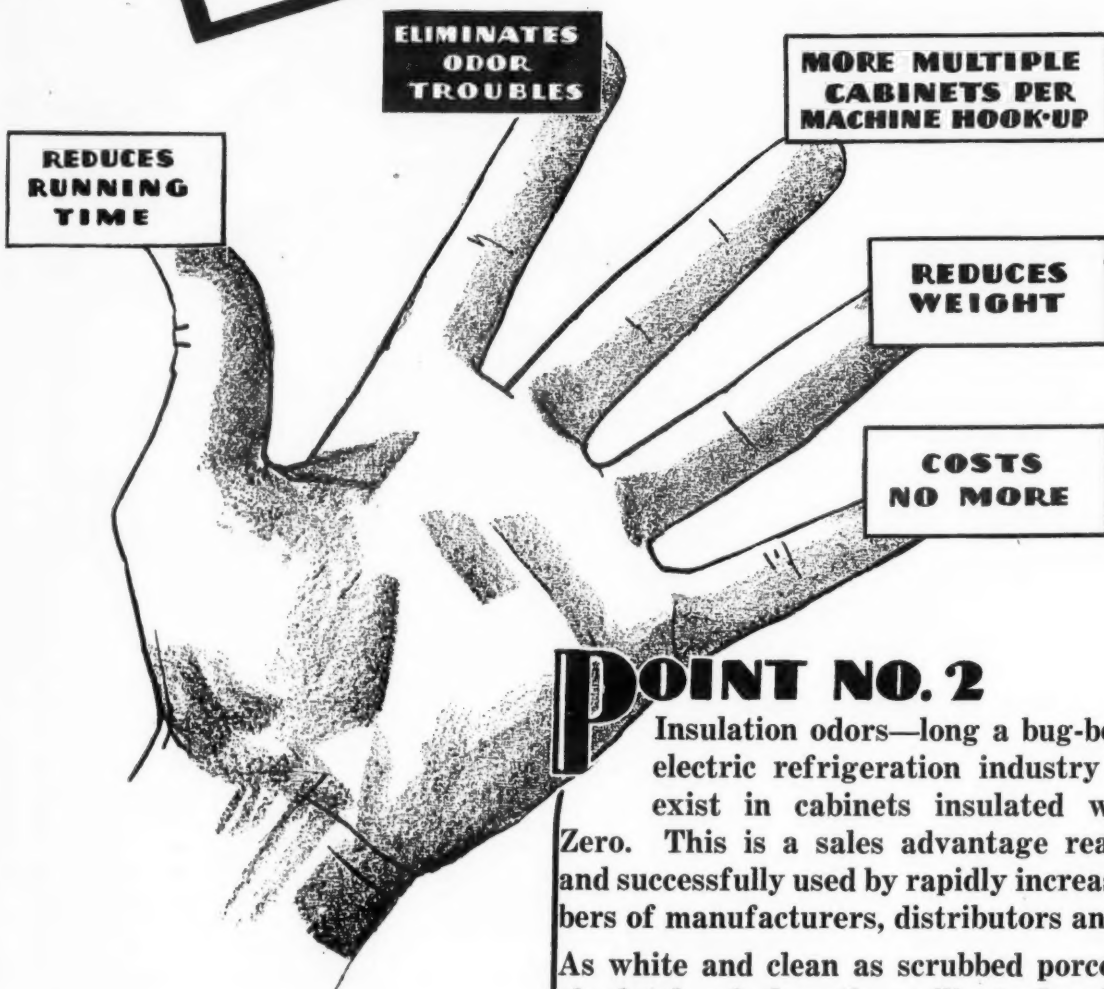
New York Offices,

Commercial Division, New York Central Bldg.
A. L. CANFIELD, Manager.

Chicago Offices,

Commercial Division, 666 Lake Shore Drive.
D. W. MADDEN, Manager.

DRY-ZERO INSULATED CABINETS OFFER YOU 5 DISTINCT SELLING ADVANTAGES!



POINT NO. 2

Insulation odors—long a bug-bear of the electric refrigeration industry—do not exist in cabinets insulated with Dry-Zero. This is a sales advantage readily seen and successfully used by rapidly increasing numbers of manufacturers, distributors and dealers.

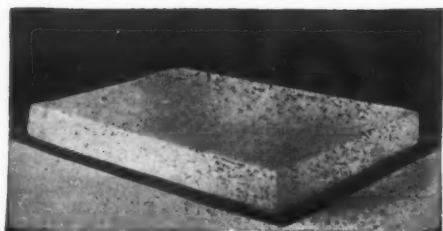
As white and clean as scrubbed porcelain, and absolutely odorless, the resilient, glass-like fibres of Dry-Zero have a natural aversion to moisture* and solve the odor problem—once and for all.

Dry-Zero insulated cabinets are easier to sell—ask your manufacturer for them!

DRY-ZERO CORPORATION

130 N. Wells Street Chicago, Illinois

*The Dry-Zero fibre CEIBA is standard in U. S. Navy Life Jackets.



Dry-Zero Pliable Slab is mounted on a moisture-proof backing which is hermetically sealed in place by pressure alone, in a single operation. It is quickly and easily applied.

*Keep them on your finger-tips!
They help you sell!*

DRY-ZERO

Essington Answers Charges Of Health Commissioner Kegel

Statement of Thurlow G. Essington, counsel for the manufacturers, before the Health Committee of the Chicago City Council, Aug. 22.

THERE have been some statements made, Mr. Chairman, concerning the industry. I take it from these statements that the industry has not been fair and above-board and 100 per cent co-operative in this situation.

We came in six or eight weeks ago with an ordinance. No changes have been made in that subject. The Boiler Department has come in with an ordinance stating that as a practical situation absolute safety can be secured. That also is the recommendation of the industry.

A week ago a new device was presented in all good faith. A committee of engineers met and found the defects in it. Today, there is a new suggestion; in fact, there are three new suggestions, and I predict if there is an adjournment for a week or two weeks, there will be other suggestions. A good deal of time has been consumed.

Speaking for the industry, we would like to see action on this as soon as consistent with the importance of it and the technical features of it. I don't see any reason why the Committee should not hear the statements of these engineers today, but let me suggest respectfully that if an ordinance is adopted in conformity with the suggestions on which there is no difference between the city departments and the industry, this does not close the doors for all time.

If the Health Department or any other department can effect a device that is workable and practical, we can always amend that ordinance to comply with the situation.

I want to assure everyone that there is no intention on the part of our industry to pass the buck or to legalize a leak. I have never heard where an inspection of plumbing or an inspection of an electrical installation legalized any discrepancy in that installation or passed the buck to anybody. We are willing to pay the fees, etc.

There is not an iota of difference between the industry and the Health Department on the health feature—not one; but when the Health Department suggests a mechanical device that won't work, the industry cannot agree with them.

I may say that a substantial agreement has been reached on everything

except the control of the amount of refrigerant. Now to limit the amount of refrigerant or the amount that will leak is a mechanical feature; there is no question as to the health feature or the danger of the refrigerant; no question as to the necessity or advisability for permits,

Ald. Taylor Avers Refrigeration Is Godsend

Statement of Ald. James H. Taylor before Health Committee of Chicago City Council, Aug. 22.

NOW in the Health Department the plumbers tell us they can install this multiple system without a leak. We also have the Boiler Department that tells us they can install it without a leak. In view of this, why should we provide for a leak?

We have a statement from the Commissioner here that in the case of sulphur dioxide, the inhalation of two breaths of sulphur dioxide produces consumption some months later. I believe that is correct.

Now, I am in favor of having a system which is absolutely safe. I represent 150,000 people. I am vitally interested in their health. I know the value of it—it is a Godsend.

I don't care whether it contains ten pounds or a hundred pounds, all I want is to have it so we can all get the benefit of electric refrigeration. I am not in favor of having provision for any leakage. If you can stop it at two pounds, why not stop it at one pound or before it leaks at all?

inspections and reinspections and how those will be done. No difference as to the fees.

Six weeks ago we passed back to the committee with a statement that the industry itself differs on the amount of that refrigerant and we came in here with the facts without any attempt at concealment.

Chicago Should Back Health Department, Says Ald. Albert

Statement of Ald. Arthur F. Albert before the Health Committee of the Chicago City Council, Aug. 22.

I AM going to be very frank about my sentiments in this. We could sit here six months, not two weeks. It is simply a question of following the advice of someone. I am not averse to taking advice, particularly when I don't know anything about the subject matter. I don't know how much you Aldermen know about this matter.

We have many department heads here. Sometimes I am inclined to oppose them. I don't give a continental about Commissioner Kegel. I have never been in his office, but I will say this—I am going to follow his advice. I think he is one of the best cabinet officers the mayor has put in office.

I won't know anything more about this matter than I do now. Dr. Kegel is the Health Commissioner. He was selected by us to do that line of work. With me it is simply a question of whether I am going to place confidence in Commissioner Kegel.

Cost Immaterial
I don't care what the cost is, if we cannot protect human lives. I am going to vote to protect human lives regardless of the cost. I don't care what difficulties the manufacturers have. I am only concerned with what is best for the people of Chicago, so I think as aldermen we should follow Commissioner Kegel's advice.

We may be scientific politicians, but we are not scientific enough to try to solve a medical question. Some department heads, who are also scientific politicians, put over any kind of an ordinance they want. I am going to make it very emphatic and let the industry know that I think it is our duty to let them know we are going to follow the recommendations of the Health Commissioner.

In a question of safety with reference to protecting and safeguarding the health of the people, I am not going to take the advice of outside interests, whose only interest is making money (all of us are, of course, interested in making money). On the contrary I am going to take the advice of the department heads that are selected.

It is very strange that they think they don't have to pay much attention to the Health Commissioner. They want to get by and deal with us, give us engineering advice, etc. That does not mean a thing to us—we don't know anything about it. Commissioner Kegel does know. He tells us frankly, and it is the truth, too, that the people are in danger. Now, I am going to do everything I possibly can to help him.

I think we ought to tell the industry that they had better get together with the Health Commissioner. I am going to let the industry know I think the Commissioner is absolutely on the square. If

I am in error, I would like to hear someone state otherwise—advise me why they don't think so and I will, perhaps, change my mind.

At present, I am with him and I think the sooner this thing is settled the better

Ald. Ross Believes All Arguments Unavailing

Statement of Ald. Joseph C. Ross before the Health Committee of the Chicago City Council, Aug. 22.

NOW, if it is to be an absolute degree of safety that we want let's abolish the direct method of refrigeration entirely. I believe we should get this thing down to a basis where we can all agree upon it. We are arguing about a thing that has not been proven.

Up to the present time we have got nowhere in this session today. We have a report to hear from the engineers of the Health Department and the engineers of the industry. Now, it looks after all as if it is going to be a question of the judgment of this committee as to what is going to be sent to the City Council.

When we get through we shall try to present to the people the best code for their safety, and for the benefit of the industry because of the good that refrigeration is doing.

for the people of Chicago. I think the Commissioner has made a study of this—that is his job, and I am going to relieve myself of the responsibility by concurring with his suggestions and accepting his advice.

Asks Bids for Refrigeration Work In Two N. Y. Hospitals

Bids will be opened by the Commissioner of Mental Hygiene at the Capitol, Albany, September 25, covering refrigeration work for tuberculosis pavilion, Utica State Hospital, Marcy Division, Marcy, N. Y.

Bids will also be opened by the Commissioner of Mental Hygiene at the same place and date for refrigeration work, Psychiatric Reception Hospital, Willard State Hospital for the Insane, Willard, N. Y.

Ald. Ringa Suggests Committee Give Groups Time To Agree

Statement of Ald. Frank R. Ringa before the Health Committee of the Chicago City Council, Aug. 22.

AS I understand the arguments this morning, the difference between the two ordinances is a safety device. The Commissioner states that the mechanical device can be manufactured, that it can be applied on these different machines and give safety to the user. Now that is the difference that has been argued here this morning. I think that was the bone of contention here for the three meetings that I sat in.

If that is the bone of contention between the Health Department and the manufacturers, give them time. Let them work out some safety device. They have had a week of it, and from the statements of the Commissioner they seem to have got pretty close to agreeing on something, or the engineers got a pretty good idea. Possibly over night one of their experts will devise a mechanism of some kind that will provide safety for these ice machines.

We, as a committee, have heard plenty. Let us give them time to come in and tell us they have agreed on a certain valve or detector that will point the danger of these leaks. The next thing I think that this committee should do is to have a committee section, a representative from the Health Department, a representative from the manufacturers, and then study the ordinance paragraph by paragraph.

Now I am for safety of the people. There is no one to question me on that. Yet, I have this in mind: we are going to throw twenty-five or thirty thousand people out on the street, and we Aldermen all know what that means—we all know the number of people that come and ring our doorbell looking for jobs. Let these

All Factions Should Agree, Asserts Ald. Sloan

Statement of Ald. Frank A. Sloan before the Health Committee of the Chicago City Council, Aug. 22.

THEN, Mr. Chairman, I think it is useless for us to sit here wasting our time, listening to something that is going to be of no avail. I think it is better to wait until some time when they get something definite and are ready to come in and report their findings.

I was selected to represent 90,000 people and I am going to represent them. I am not going to let any engineer act for me. I am going to act for myself.

Let the Health Department, the Boiler Division and the Fire Department and every other department in the city government work it out, and then when they have something definite come in.

two sides get together and come back in two or three weeks, tell us what they have found, and if they have not reached an agreement at that time we will take the matter in our own hands.

KELVINATOR CORP. HOLDS FIRST EMPLOYEES PICNIC

Kelvinator Corp., Detroit, held its first employees picnic at Spohawk Camp, near Ann Arbor, Mich., on August 16. The journey from Detroit to the picnic grounds was made in motor cars and busses. H. H. Lee of the personnel department, F. A. Vivian and E. Freericks of the standards department were in charge of affairs for the day. Employees and their families competed for prizes in the sporting events that were on the program.

Electric Refrigeration Co., Louis- ville, Buys Evansville G. E. Outlet

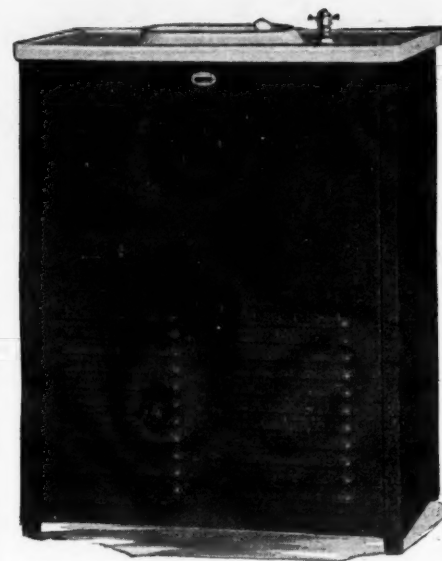
The Electric Refrigeration Co., with headquarters in Louisville, has bought the interests of the Electric Refrigerator Co., General Electric refrigerator agents in Evansville, Ind. This deal increases distribution area through the addition of southern Indiana and western Illinois territory. The agency formerly operated by S. A. Schmitt at 318 South Sixth Street, Evansville, will be moved to new location.

The Electric Refrigeration Co., organized 21 months ago, has grown from a force of two to a staff of 85 employees, according to L. H. Miller, president. The company also operates a branch office and salesroom in Lexington, Ky.

Commercial Investment Trust To Finance Wayne Dealer Sales

The Commercial Investment Trust Corp., New York, N. Y., has closed a contract with the Wayne Home Equipment Co., Fort Wayne, Ind., for financing sales by Wayne dealers and distributors.

The Emblem—**EBCO**—of Quality



MODEL C-513

"EBCO" WATER COOLERS

for Schools, Offices,
Factories, Public
Buildings and
Restaurants.

Safety, sanitation, comfort and dependability are four reasons for "EBCO" preference. Contamination of the water supply is utterly impossible—the "EBCO" insures pure, cool water at all times.

"EBCO" Coolers meet the requirements of all leading electrical refrigerating machines. They are adaptable to flooded and direct expansion systems. Compressors can be contained in cooler cabinet or installed remotely. Capacities range from 3 gal. water per hour cooled from 80° F. to 50° F. up to 84 gal. per hour. "EBCO" Coolers are made for individual units, multiple hookups or circulating systems.

The stream height is regulated automatically, no water waste, squirt or splash.

Sell more refrigerating machines with "EBCO" Coolers—known everywhere for highest quality.

FOR DETAILS, WRITE TO

THE D. A. EBINGER SANITARY MFG. CO.
401 West Town St. Columbus, Ohio

Manufacturers also of Ventilated Urinals, Closets, Wash
Fountains and Steel Enclosures for Toilet Rooms.

GOLDING AND GUENTHER ADVANCED BY SERVEL

Announcement is made by H. W. Foulds, vice president of distribution, Servel Sales, Inc., of the appointment of A. T. Golding as advertising and sales promotion manager of the Servel Products Division, which includes all refrigeration equipment of the electrical compression type, both domestic and commercial. Mr. Golding joined Servel in May, 1928, later being made sales promotion manager. Headquarters will continue in Evansville, Indiana.



A. T. Golding

Advising of the Electrolux, gas refrigerator, will, as formerly, be directed by William H. Reynolds from Servel's New York office. Sales promotion on Electrolux will continue to be directed from the factory at Evansville.

A further appointment announced by Mr. Foulds is that of R. R. Guenther as Manager of the service promotion department of the Electrolux Division of Servel Sales, Inc. Mr. Guenther has been with Servel for three years, first in a service capacity and later as Electrolux sales engineer. The department which he heads is of recent organization, functioning as a factory aid in teaching dealers the operation and use of Electrolux. Mr. Guenther's headquarters will continue to be in Evansville.

PHILADELPHIA SUBURBAN COUNTIES GAS & ELECTRIC TO REDUCE POWER RATES

A cut in rates for electric service calculated to effect a saving to consumers of approximately \$700,000 a year will be made on September 12 by the Philadelphia Suburban-Counties Gas and Electric Co. The new rate schedule, applicable to residential, commercial and agricultural users of electricity will affect Montgomery, Chester and part of Delaware counties.

The new residential electric rates will be: For the first 25 kilowatt hours per month 9 cents a kilowatt hour. For the next 36 kilowatt hours, 6 cents. For all other current used in excess of this, 3 cents a kilowatt hour. The present rate is 10 cents for the first 50 hours, 6 cents for the next 50 hours and 4 cents for all additional current used.

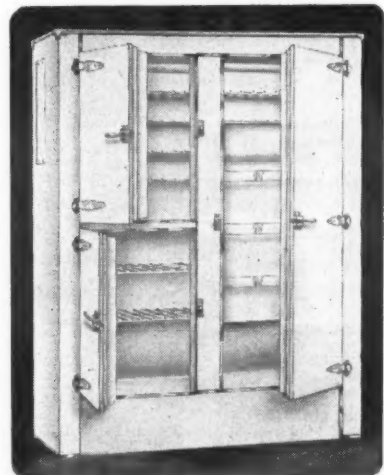
The commercial schedule will be 9

NEW COMMERCIAL LINE ANNOUNCED BY BELDING-HALL

BELDING-HALL CO., Belding, Mich., announces a new type of construction in commercial cabinets for electric refrigeration.

This new construction feature, it is claimed, positively assures an uninterrupted and complete circulation of air through the entire food compartment area. As described by Belding-Hall, it literally "grabs" the cold air from the coils and "escorts" it completely around the cabinet. There is only one way the cold air can travel, and it must circulate continuously and completely through the food storage area. This new feature assures uninterrupted circulation under all weather conditions, and reduces materially, the operating time of the unit, besides providing more efficient performance, according to the manufacturers.

These cabinets are designed for cross-



One of the New Belding-Hall Models

fin coil or zero tube installations. A specially constructed compartment for the coils allows quick and easy installations. Each cabinet is provided with end doors to permit easy access to the coils.

These cabinets can be had in all-porcelain, lacquered steel, or oak cases, and are furnished in either three or four door type of 44 cu. ft. capacity, five or six door type of 68 cu. ft. capacity, or five or six door type of 81 cu. ft. capacity. They also can be furnished either with or without meat compartment and in various designs.

C. P. Wood Co. Moves

The C. P. Wood Co., Cincinnati, Ohio, representatives of the Vilter Mfg. Co., and the Brunswick-Kroeschell Co., has moved to its new building at Blair Ave. and C. L. & N. Railway.

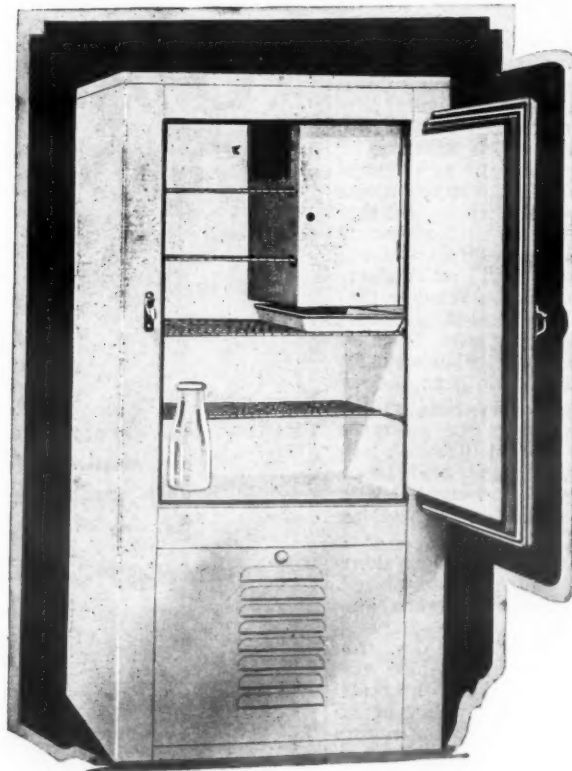
AUTOMATIC

DOUBLE DUTY

saves food chills water

MORRISON ILLINOIS

Cabinets for Increased Efficiency



ILLUSTRATING MODEL 1101

Note $\frac{3}{4}$ shelf with increased storage space.

"INDEX"

- A. INSULATION
Dry Zero—15% more efficient and economical.
- B. CONSTRUCTION
Heavy Steel—zinc coated and patent leveled.
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Perfect proportions. No needless trim.
- D. HARDWARE
Brass with nickel finish. Special silver at extra cost.
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All sizes—6 to 14 sq. ft.
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30 to 75 pounds lighter.

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Fine Refrigerator Cabinets for 38 Years

MORRISON

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CONTRIBUTORS TO NATIONAL FOOD PRESERVATION FUND

French Butchers Are Beginning To Capitalize on Sales Appeal Of Modern Cooling Equipment

By Dorothy Dignam

THE French butcher may be no respecter of animals—indeed wild boar and tame horse are a regular part of his stock. But he's beginning to show considerable respect for the newest methods of meat preservation and electric refrigeration firms in France estimate that 75 per cent of their commercial installations are now made in butcher shops.

France, of course, is a bread-eating nation. Meat is of secondary importance. In a delineation of international character, they always say that a Frenchman will order one dish in a restaurant and then fill up on bread, which is included free; an Englishman will ask for a small cut of beef and a large pot of tea, while the American will pound on the table and make a noisy demand for seventeen kinds of cooked vegetables.

Be that as it may, meat is more likely to appear twice a day on the family

of electric refrigeration is the fact that with a cold-room or large cooler a dealer can buy his meat supply a week in advance, do away with daily purchasing, buy to better advantage in quantity and not run any risk of a sudden weather change affecting a large stock-on-hand. Kelvinator, Inc., have had good success with sales arguments along these lines. Frigidaire Limited, is using a direct-mail campaign of four pieces to get prospects.

But when a butcher is finally sold on an installation—and that means selling



O la, la. The franciful French. This prosperous-looking Parisian butcher, M. Moreau, is not all pork roast, brown paper and sawdust floors. He has an artistic soul and places fresh flowers between the coils of his window-display refrigerators. The flowers, too, keeping their original beauty in the frosty cold, illustrate the purpose of the refrigerator—to preserve freshness. Plenty of signs are used to inform the public that the meat in this shop is given extra care.

table in France than it is in America because the mid-day meal—to which all menfolk go home, even in Paris—is quite as large as the evening dinner and frequently includes both meat and eggs.

The butcher business is therefore important in France and very highly specialized. Four types of stores exist and each sells a particular class of viandes.

The *Boucherie* handles all fresh meat (except pork), fowl and game.

The *Charcuterie* sells pork, cured meats and delicatessen products such as boiled ham, meat loaf, pickled fish.

The *Chevaline* handles horsemeat exclusively, selling it opening and honestly in the poorer districts. Gilded horseheads hang over the door like the familiar "three balls" of the pawn shop and there is no attempt at deceit.

The *Poissonnerie* or fishmarket, selling all kinds of seafood.

The architecture of these shops, especially of the fresh meat stores, is usually of the open-front variety. The front of the building is entirely open and is closed at night by iron shutters pulled down from above.

The interior is filled with dressed animals and large cuts hung from the ceiling on hooks and at the front of the store, on the sidewalk, a counter is arranged with chops, roasts, etc. These counters are moved indoors at the end of the day, the iron shutters pulled down and the damp cold of the night air is depended on for preservation.

It is not considered good business, however, to have much stock left over. The clever retailer knows how much to bring up from the public market in the morning to cover his day's sales. I have passed butcher shops at six o'clock in the evening to see just one leg of lamb suspended from a hook in the ceiling—the sole left-over in the day's turn-over.

Some of the larger stores, of course, take ice—which is not hard to obtain in cities, nor unduly expensive. But in the smaller towns, the butcher himself must usually haul the ice to his store and this is both expensive and troublesome.

It has been more practical, therefore, to stock the store from day to day and depend on steady sales and even temperatures to maintain a profit balance.

This is, in brief, the market as it is faced today by manufacturers of electric refrigeration. These firms have had to build up their own selling appeal. One of the best arguments they use in favor

of his wife, too, because Mama is always a factor in business here, usually acting as cashier, bookkeeper, auditor, bill-discounter, employment manager and general director in charge of keeping down overhead—when M'sieur is finally persuaded that an electric refrigerator will be a means of thrift in his business, he is quick to merchandise the new equipment to his trade. Cold storage rooms are built with small display sections opening into the shop so that customers may be served from these direct and will be impressed with the fact that refrigeration has been installed. Window display cases, electrically cooled, are also built to fit across the entire front of the open store, leaving only an aisle for passing in and out of the shop proper.

Signs are put up everywhere calling attention to the particular care given the meat in that shop and to illustrate how electric refrigeration keeps food fresh, one enterprising butcher decorated with roses the glass case housing the freezing unit.

While butcher and delicatessen shops have led in the number of orders placed, the dairy stores are being worked systematically. Milk, butter, eggs and cheese are sold entirely apart from dry groceries, while the fresh vegetables and fruits are found in the public markets. Day-to-day buying with a policy of no left-overs, and the fact that the nights are cool practically the year 'round, has made this a difficult market for both ice and electric refrigeration. But the appeal of savings to be made through quantity buying and the assurance of no loss through spoilage, are making a strong impression on the thrifty French.

Even when American-made refrigerating machines are ordered, cold storage rooms are always built locally, and usually large commercial cabinets are also purchased by arrangement with French manufacturers. Commercial cabinets range in size from 35 to 150 cubic foot capacity.

When electric refrigerators are imported to France complete, they are shipped disassembled and the duty paid on each taxable part separately. If they were shipped complete, duty would be charged at the rate of the highest taxable part—the motor. But by paying the duty on the small separate parts the complete charge may be kept down to around 16 per cent on some models. The refrigerators are then reassembled in France.

COPELAND AGENTS IN STATE OF WURTEMBERG, GERMANY ARE ACTIVE

Copeland agents in the State of Wurttemberg, Germany, are members of the Fink family, furniture and refrigerator manufacturers. Carl Fink and his five sons, Carl Jr., Johann, Albert, Erich and Paul, are located in the cities of Asperg, Ludwigsburg, Freiburg, Ulm, and Stuttgart.

At the Spring Industrial Exposition in Leipzig, the Fink organization put on a Copeland exhibit which was said to be the center of attraction at the industrial exhibit hall. Also of interest, is an installation made by the Finks in a Stuttgart department store. The contract for this installation included the building of tables, counters, and cabinets, and the installation of five Copeland refrigerating units.

Electro-Kold Installation Made on Lighthouse Tender

The Electro-Kold Sales Co. of Portland, Ore., reports that an installation has been made on the U. S. Lighthouse Tender "Manzanita."

Two special expansion valve controlled units were used in a 60 cubic foot refrigerator. There are dual motors, one motor being for direct current use, and the other for alternating current while the boat is docked.

Judson C. Burns, Inc., Holds Outing for Employees

Judson C. Burns, Inc., distributors of General Electric refrigerators in Philadelphia, Pa., held their annual outing on July 10. More than 400 employees of the organization with their families attended the affair.

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ON

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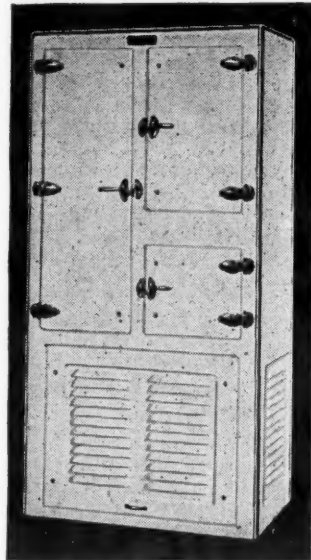
5, 6, 7, 9 and 12 Cubic Feet of Food Storage

The handy base cabinet may either be used for refrigerating machinery or the storage of cooking utensils, canned goods, vegetables, etc.

These beautiful BOHN refrigerators, with their heavy insulation, sturdy general construction, and patented air-circulating principles, are an assurance that your units will render perfect refrigeration and do so economically.

Write for details of these remarkably low prices.

Many models for remote installation are also greatly reduced.



Bohn is the World's Largest Builder of Quality Refrigerators

BOHN REFRIGERATOR COMPANY
SAINT PAUL, MINNESOTA

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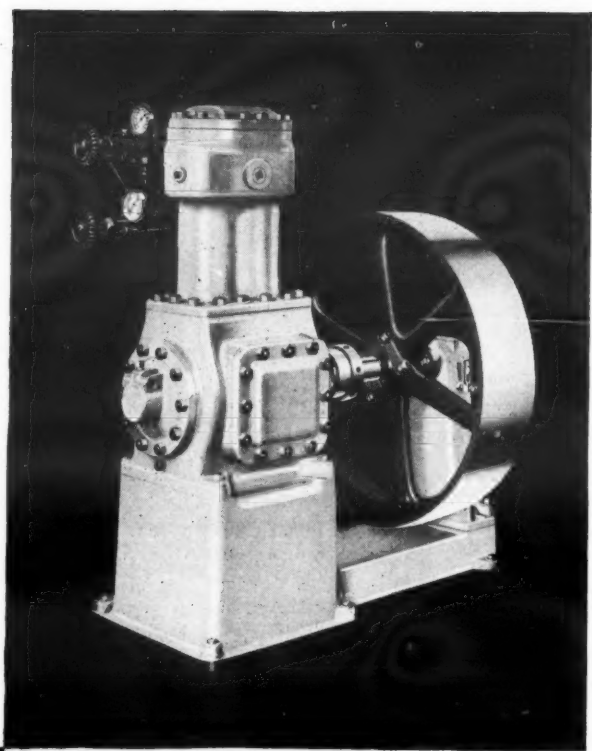
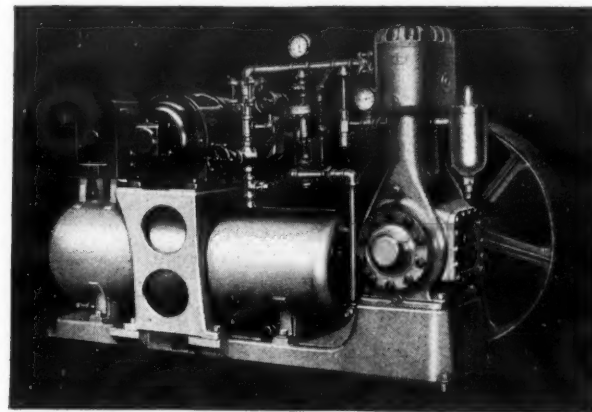
CHAIN STORE ORGANIZATIONS CHOOSE LIPMAN

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You should be selling Lipman Electric Refrigeration. Grasp a real opportunity now by inquiring about the few territories that are still open to well-rated distributors. Your inquiry will be held strictly confidential. Address General Refrigeration Company, Beloit, Wis. Write, wire, or phone today!



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A SIZE FOR EVERY COMMERCIAL PURPOSE

Crack Refrigerator Salesman Discusses Ten Requisites of Successful Specialty Selling

First Prize Winner in G. E. Sales Contest Says Good Salesmen Are Not Born, But Are Successful Only Through Their Own Efforts

By R. A. Sullivan

WHAT makes a champion salesman? Lumay J. Mayeaux, assistant sales manager of the electric refrigeration department of Woodward Wight Co., New Orleans, who won first prize in the General Electric Refrigerator sales contest last fall, says that good salesmen are not born but are successful only through their own efforts. There are some, he said, who will never become good salesmen but the average person who has the determination and willingness to learn can become a good refrigerator salesman.

To prove that electric refrigerator salesmen can be broken in quickly and easily, Mr. Mayeaux pointed out the fact that he had only been selling them for slightly more than six months when he won the General Electric contest by selling more refrigerators than any other salesman in the country.

"While I do not believe in having a number of set rules to go by when making a sale," Mr. Mayeaux said, "experience has taught me to make use of the following items:

The Primary Essential

"First, of course, it is necessary to have the idea fixed in mind that the sale which you are working is worthy of your best efforts and that you are not going to quit until you have completed the sale. This, in my opinion, is the primary essential of good salesmanship. Unless you are determined and positive to make each sale you can not expect to be a champion salesman.

"I attribute most of my success as a salesman to the fact that I can really get great enjoyment out of selling refrigerators and this is also an important feature to the man who wants to be successful—learn to love the business. Some people might deem it hard work to talk an uninterested person into buying an expensive electric refrigerator, but I think the harder they are the more fun it is to finally get them to purchase. This might be termed sporting element and is a big factor in making a successful salesman.

Direct All Energy to Peach Goal

"There is a tendency among salesmen to regard their job merely as a means of earning money. To be a real success, however, a man must regard his position as the starting of a career and should direct all his energy to attaining his goal.

"This is an era of specialization and salesmen as well as physicians and other professional men should learn to specialize. By that I mean he should decide what he wants to sell and then concentrate all his efforts on selling it. If he is going to sell commercial refrigerators he should study the needs of groceries, meat markets, florists and the like, so he can talk intelligently to the prospect, but on the other hand if it is domestic refrigerators, he should learn what the housewife wants and then plan his sales talk along those lines. There is such keep competition in salesmanship, as well as other lines of business that it is almost necessary to specialize in one phase.

"Salesmanship has changed greatly in the past few years and it is no longer merely the presentation of samples and prices, but it takes a good talk to convince the customer that the merchandise one is selling is the best for his particular requirements. If a man wants to sell an electric refrigerator to a housewife he cannot merely say, 'Here is the refrigerator and this is the price.' He has to first create a desire for it and after he has made the prospective buyer feel the necessity of having it, then he should mention price, but not before. This is why numbers of salesmen do not succeed.

"Another thing I always try to do is to get the customer's complete confidence. This can be accomplished by telling the truth and avoiding the temptation to exaggerate the qualities of the refrigerator that is being sold.

Speak the Buyer's Language

"Speak the buyer's language. This is most important because you cannot hope to make a sale if you talk to a man who has had a very limited education in the same manner you would to one who has had a college education. It is a good idea to study the English language as much as possible to be able to talk on even terms with well educated men, but when talking to an uneducated man use his own words so that he can understand. If he swears, swear with him. In this way you will establish a friendly relation which will probably result in a number of additional sales to his friends.

"Do not force a point when selling a refrigerator but if you see the customer losing interest in the subject about which you are talking drop it immediately and try something else and if he loses interest in that, keep trying until you find

grocery stores. Then he joined the sales organization of the Woodward-Wight company as a door to door washing machine salesman and it was not long before he led all the other salesmen in the total volume of sales. After leading the washing machine salesmen for some time he decided to try his hand as an electric refrigerator salesman and was soon leading all the salesmen in both washing machine and electric refrigerator departments.

Copeland Dealer Installs Unit In "Minute Man" Diner

A novel electric refrigeration installation is that recently made by Straker's Service Store, North Attleboro, Mass., Copeland dealers. It is in the "Minute Man Diner", a lunchroom built in the form of a railroad dining car, located on the Boston-Providence road. It is the first of its type in the New England States and its novel construction has been bringing it a lot of patronage.

Frigidaire Sends B. J. Beyl To Berlin, Germany

Frigidaire Corp., Dayton, Ohio, has sent B. J. Beyl to Berlin, Germany, as a representative in that country. He has been associated with different refrigeration companies in Omaha for several years past. Mr. Beyl is better known to readers of the News as Louis Barth, having written several stories along various lines in refrigeration.

Kentucky Copeland Distributor Issues House Organ

The M. H. Moise Co., Lexington, Ky., Copeland distributors, is issuing a monthly house organ entitled "Kentucky Copeland News." Issue No. 3 contains announcements of recent installations made by Copeland dealers in Kentucky.

10 SALES RULES

1. Like your job of selling electric refrigerators.
2. Learn to specialize.
3. Flatter your customer just a little.
4. Do not be a "yes" man.
5. Speak the buyer's language.
6. Know your subject.
7. Each sale should be worth your best efforts.
8. Keep the sporting element of salesmanship in your mind.
9. Never force a point with the prospect.
10. Must be three satisfied parties to each sale.

something that will hold his attention. If you have sold yourself to the customer this will be easy to accomplish because he will give you leads and if you are alert you can detect and follow them and finally make the sale.

"I have not seen a person yet who did not react pleasantly to a certain amount of flattery. Of course, it is not good to use it too much, for the customer will discover what you are doing. I consider a certain amount absolutely essential in most instances to making a sale.

"Do not be a yes man, agreeing with everything the customer says. On the other hand, do not disagree with everything he says that is not correct but show him where he is wrong by employing tactful methods.

"There must be three satisfied parties to each successful sale, the buyer, firm, and salesman. If the buyer is completely satisfied and all matters are understood by him this will eliminate any complaint and in addition maintain friendly relations between the firm and the customer.

Exaggeration Brings Trouble

"Be a salesman and not a liar, do not exaggerate the merits of your refrigerator because it will invariably bring trouble in the end. It is best to have the customer understand exactly what he is getting and he will not expect more than the refrigerator is able to give. But if, in the desire to complete a sale, you have overestimated the qualities of the refrigerator and led the customer to expect it to accomplish things it cannot do, he will naturally complain.

"When endeavoring to talk a person into buying a refrigerator, do not talk of things in a general way, but be specific and to the point and the only way to do this is to be absolutely sure of yourself and know what you are talking about.

Avoid Contradictions

"Take age into consideration, a salesman twenty years old, should not tell a man of fifty what is correct even though the young man may know more about the subject than the older one. It is best to make polite suggestions instead, and thereby maintain friendly relations. Older men usually have set ideas about some things and resent very much to have someone contradict their opinions, especially a young man.

"I make it a strict rule never to argue with a customer, for as soon as you begin to argue, the buyer will almost invariably take the opposite side of the question and the salesman will find it a hard task trying to convince him he is wrong. It has been very seldom in my experience that a sale was made by arguing.

"One of the best assets is the good will of the firm for which the salesman is working. If he is employed by a company that is well known and has a large number of friends, all he has to do is to mention the fact that he represents this firm and he is almost sure of having an interested audience."

Mr. Mayeaux has been a salesman for approximately twelve years, starting in 1917 as a salesman going from door to door selling washing powder. After doing this work for some time, he joined the Navy and entered the war. When the war was over he returned to New Orleans and started working for a jobbing concern selling food products to

Uniform Temperature Insurance

We endorse the National Food Preservation Program and offer, to the Cabinet Manufacturer who is interested in improving the efficiency of his cabinet, the benefit of our years of research in the field.

The first thing to look to is the insulation. Is it thick enough? Will it remain in perfect condition throughout the life of the cabinet?

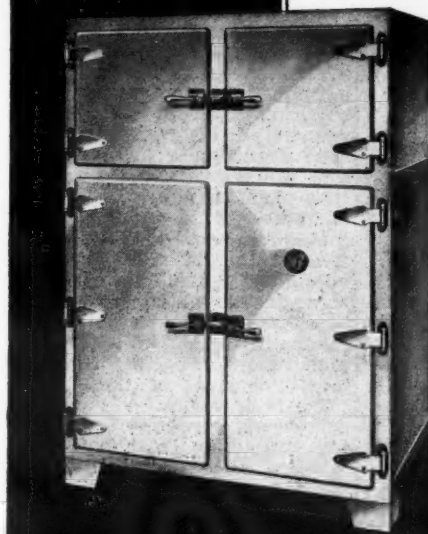
An adequate amount of Pure Corkboard Insulation in your cabinet prevents unnecessary refrigeration loss and makes it easy to maintain temperatures suitable for the preservation of foods.

Write us for full information about Novord Corkboard Insulation.

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Will it pay you to use Anaconda Die-Pressed Parts in Brass, Copper or High Tensile Strength Bronze Alloys?

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- 2 Would the high tensile strength of Anaconda Die-Pressed Parts—nearly twice that of brass castings—be of value in your product?_____
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- 4 Would your product be benefited by the uniform density of Anaconda Die-Pressed Parts which are gas, air and water tight?_____
- 5 Would you find it profitable to use parts free from both interior and exterior defects and so smooth of surface, and close to dimensions, as to require very little machining?_____
- 6 Are you sufficiently interested to send blue prints, sketches or models of parts required, with information as to quantities, in order to obtain quotations?_____
- 7 And would you like to receive sample shapes showing the quality and finish of Anaconda Die-Pressed Parts?_____

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U. S. CHEMISTS TEST ANIMAL RESPONSES TO REFRIGERANTS

EXPLANATORY

Following is an excerpt from Public Health Bulletin No. 185, "Physiological Response Attending Exposure to Vapors of Methyl Bromide, Methyl Chloride, Ethyl Bromide and Ethyl Chloride," issued from the Government Printing Office, Washington, D. C., in March. This bulletin was prepared from data contained in the Bureau of Mines to the National Research Council and the Dow Chemical Co. by R. R. Sayers, W. P. Yant and L. B. Berger, all of the United States Bureau of Mines.

A report of this bulletin was made in the July 3 issue of the Electric Refrigeration News. The bulletin contains much information which has direct bearing on facts brought out in the Chicago code hearings.

IN order to give the reader a basis for evaluating the toxicity of the compounds described in this report, the various concentrations of some fairly common gases and vapors that produce a similar degree of physiological response have been compiled from the literature and are shown in Table 2, along with what are thought to be comparative values from the study described in this report. It is realized that information coming from such a wide variety of sources is subject to variations in observation and interpretation, but in a fair way it should suffice to show the general order of toxicity.

The various compounds represented in the table have been arranged in the order of increasing concentrations necessary to produce death in a very short time, or conversely, in the order of decreasing relative toxicity for that particular physiological response. For the succeeding two degrees of response—namely, "dangerous in 30 to 60 minutes," "maximum amount for 60 minutes without serious disturbances" and "slight symptoms after several hours or maximum amount for prolonged exposure"—the order is indicated by the number in the column to the right of the concentrations of vapors producing the response. As would be expected, variations in position occur for the four degrees of response, but these are not sufficient to change the general order of toxicity in the range of short exposure. Marked changes in relative order, however, occur when comparing the results for short exposure with concentrations that produce slight symptoms after prolonged exposure.

The positions occupied by methyl chloride, ethyl bromide, and ethyl chloride in Table 2 indicate that for short exposure their toxicity is less than ordinary gasoline or chlorine derivatives of hydrocarbons such as chloroform and carbon tetrachloride. For exposure of 30 to 60 minutes, methyl chloride and ethyl bromide are similar to gasoline, chloroform, and carbon tetrachloride, whereas ethyl chloride is distinctly less toxic. In a general way the same is true for several hours' exposure. Methyl bromide, however, is a little more toxic than gasoline, chloroform, and carbon tetrachloride for very short exposures and is markedly more toxic than these compounds in exposures of 30 minutes or more. That these alkyl halides should be found less toxic than gasoline was somewhat surprising to the authors, and a later study will be made of gasoline under conditions comparable to the experiments described in this report.

In general these alkyl halides are markedly less toxic than the compounds which are usually termed poison gases,

such as ammonia, carbon monoxide, hydrocyanic acid, hydrogen sulphide, chlorine, phosgene, etc. However, for exposures of several hours, methyl bromide increases in relative toxicity and approaches that of some of the familiar poisonous gases. Also, since it is not unpleasant and but faintly noticeable in small amounts, it probably presents a greater hazard than some of the toxic gases possessing distinct warning properties. The values for methyl chloride and ethyl bromide are also comparatively lower for long exposures and in general compare with those for carbon tetrachloride. Ethyl chloride, however, is relatively nontoxic, even after exposure for several hours to 2.0 per cent vapors, though marked symptoms occur.

Factors of Importance in Health Hazards From Gases

Aside from the toxic properties of a gas or vapor there are other important factors which influence its status as a hazard to health or life. These factors include items relative to the manner in which the product is used in the home or industry, and the chances of its use resulting in a contaminated atmosphere. Along with this might be considered the size of the place in which contamination would occur, the amount of vapor that might escape, ventilation or means of escape of the vapors and contaminated air, occasion for exposure of persons at the place of contamination or adjoining places, etc. In addition to these factors which are more or less of a nature specific to the use, there are other general factors applicable to gases and vapors in general. Probably the most important of these is the vapor pressure or volatility. For example, two compounds may have a similar index of toxicity but one may present a considerably greater health hazard due to being more volatile. If spillage occurs or there is opportunity for escape into the air, the more volatile gas will create a higher concentration of vapors in a given time with the same degree of ventilation of the space or room. Second to this factor perhaps, is the relation between the physiological response and the warning given to the senses—odor, irritation, or general discomfort produced. A gas may be very toxic, yet due to possessing the property of giving warning in comparatively nontoxic concentrations, the hazard to life may be markedly less than in the case of air contaminated with a gas or vapor which has a great deal lower toxicity, yet which in dangerous concentrations gives no warning of its presence, or at least not a discomforting or intolerable one. In this statement, however, cases of involuntary exposure, such as the trapping of victims in contaminated atmosphere or the occurrence of such high concentrations as to cause helplessness or unconsciousness before escape can be made, are precluded.

Unfortunately, most of the gases and vapors which have a wide occurrence in the home and industry do not possess adequate warning properties to prevent serious exposure. Whereas some materials give marked warning in high concentrations, the physiological response attending these high concentrations may be such that the victim is rapidly rendered unconscious or at least helpless. Also the warning property decreases with dilution and may be ineffective in concentrations which are markedly toxic for long exposure. In many cases the person will not realize the significance of the warning or, what is more important, if the warning is an odor, after exposure of a minute or two he will suffer fatigue or temporary paralysis of the sense of smell and will not recognize the presence of the vapor, at least it will not be distinct and characteristic. Experience teaches that for a warning property to be effective it must be almost intolerable under the condition of maximum exposure without serious response.

Warning Properties of Compounds Studied

With the exception of ethyl chloride none of the vapors studied possess what

would be considered a marked warning property under all conditions of exposure. Even with ethyl chloride, as well as with the other compounds, a person might tolerate exposure to high concentrations until rendered helpless. In all exposures to relatively high concentrations a dizziness and possibly some discomfort in breathing would be experienced, but this effect would in all probability be tolerated by workmen in their zeal to make repairs. In the case of high dilution of the vapors with air—in all probability constituting the large majority of cases of exposure of persons—the warning property of methyl bromide, methyl chloride, and to a considerable extent of ethyl bromide is apparently inadequate.

Use of Chemical Warning Agents for Refrigerating Media

The addition of a suitable warning agent to refrigerating media whose vapors are toxic or explosive, or both, yet which do not possess adequate warning properties, would appear markedly to lessen the hazards of their use. In the use of methyl chloride, the addition of a warning agent should be given serious consideration; the same suggestion applies, but to a greater extent, to the use of methyl bromide. Although methyl bromide is not considered to be a refrigerant, as such it may be added to other inflammable media for the purpose of reducing explosion hazards. The potential health hazard from using a mixture of methyl bromide with other media would depend of course on the particular blend and the resulting vapor composition of the mixture as regards the presence of methyl bromide vapors. Ethyl bromide may also be employed to reduce the explosion hazards of other media; its use will apparently not increase the health hazard, as it is less toxic than methyl chloride or methyl bromide and only a little more toxic than ethyl chloride; also it has a lower vapor pressure than either methyl bromide, methyl chloride, or ethyl chloride.



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When you feature the fact that your refrigerator is insulated with Insulite, you are mentioning the familiar name of a recognized quality product.

If you are not yet using Insulite, investigate its merits now, and get started. There are many reasons for the use of Insulite in refrigerators—else why would General Electric, and many other large manufacturers, use it? Let us send you a sample and data now. Write—

THE INSULITE COMPANY

1200 Builders Exchange, Dept. 30H
Minneapolis Minnesota

Automatic Latches PATENTED

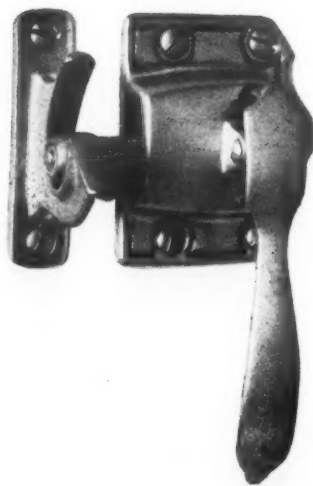
**Accurate
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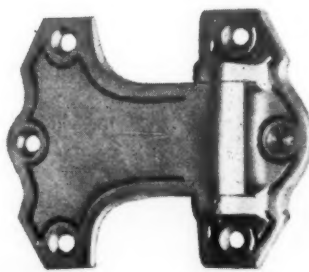
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FINISHES
Nickel
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Dull Chrome
Satin Silver Nickel
Or Any Special Finish



SPECIAL ATTENTION GIVEN INQUIRIES FROM RATED MANUFACTURERS

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GRAND RAPIDS, MICHIGAN

WE HEARTILY ENDORSE THE NATIONAL FOOD PRESERVATION PROGRAM

TABLE 2.—Physiological response to various concentrations of some common gases and vapors

Vapor or gas	Kills most animals in a very short time		Dangerous in 30 to 60 minutes		Maximum amount for 60 minutes without serious disturbances		Slight symptoms after several hours or maximum amount for prolonged exposure	
	Per cent by volume	Relative order	Per cent by volume	Relative order	Per cent by volume	Relative order	Per cent by volume	Relative order
Phosgene.....	0.02-0.05	1	0.0025	1	No data.	0	0.0001	1
Chlorine.....	.10	2	ab.004-.006	2	0.0004	2	0.001	2
Bromine.....	.1	3	ab.004-.006	3	.0004	3	.0001	3
Hydrogen sulphide.....	b.06-.10	4	ab.05-.07	6	.02-.03	7	a.01-.015	7
Hydrocyanic acid.....	a.1-.20	5	ac.012-.015	4	.005-.006	4	.002-.004	4
Hydrogen chloride.....	a.1-.2	6	.15-.2	7	.005-.01	5	.001-.005	5
Sulphur dioxide.....	b.5	7	.04-.05	5	a.005-.02	6	b.01	d.2
Carbon monoxide.....	b.5-1	8	.2-.3	8	b.05-.10	9	a.05	9
Ammonia.....	.5-1	9	.25-.45	10	a.05	10	b.04	10
Benzene.....	1.9	10	No data.	11	.31-.47	11	c.15-.31	13
Gasoline.....	2.4	11	1.1-2.2	11	.43-.71	14	No data.	0
Methyl bromide.....	e2-.4	12	e.2-.4	9	e.1	10	e.005-.017	5
Chloroform.....	a6.8-.82	d13	1.4	12	.5-.6	13	b.2	8
Carbon tetrachloride.....	4.8-6.3	14	2.4-3.2	14	.4-.6	12	.16	11
Ethyl bromide.....	e10-.20	15	e1-.2	13	e.6	15	e.17-.3	12
Methyl chloride.....	e15-.30	16	e2-.4	15	e.7	16	e.05-.10	10
Ethyl chloride.....	e15-.30	17	e6-.10	16	e4	17	e2.	14

a—Bureau of Mines Technical Paper No. 248, 1921.

b—International Critical Tables, Vol. II, 1927.

c—Henderson, Vandell, and Haggard, H. W., Noxious Gases, A. C. S. Monograph No. 35, 1927.

d—Depending on value taken.

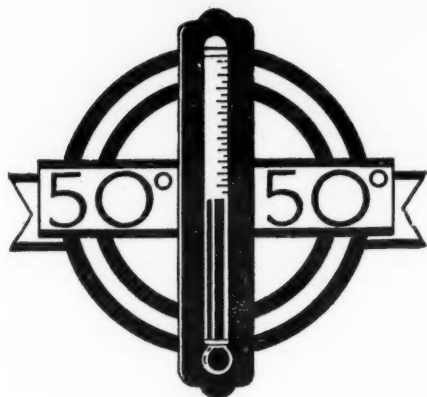
e—Data from Figures 2, 3, 4, and 5, of this report.

Where no reference number is given results are from references 1, 2, and 3.

National Food Preservation Program

MONTH OF SEPTEMBER 1929

Below 50°



Lies Safety

TO HELP YOU SELL MORE REFRIGERATION

The National Food Preservation Program during the month of September will impress the public of the nation with the value of the adequate refrigeration of perishable foods. This great cooperative movement is sponsored by many national associations and refrigeration manufacturers.

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Thousands of distributors and dealers and utilities have already made plans for the local community effort which is necessary to make the Program a complete success.

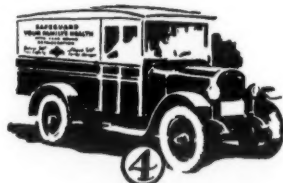
Your help is needed, too. If you are a distributor, dealer or connected with a utility, this activity is tremendously important to you. The National Program will help you sell more refrigeration in your own community, if you tie up actively with it. The following material is available for your use:



①



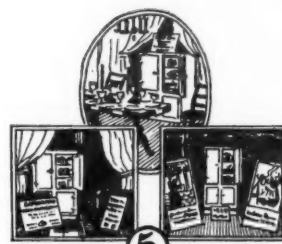
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⑦



⑧

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CLEVELAND PLANS TO ADOPT NEW SAFETY ORDINANCE THIS FALL

Gathers Refrigeration Data From Number of Manufacturers

CLEVELAND'S proposed refrigeration ordinance may benefit by a survey of leading manufacturers just completed by the city's health department.

An ordinance sponsored by Smoke Commissioner Elliott H. Whitlock has been hanging fire for more than a year. In the July 4, 1928, issue of *ELECTRIC REFRIGERATION NEWS* a complete draft of the "Tentative safety code proposed for the city of Cleveland" was published.

But according to Smoke Commissioner Whitlock it has not been completed for presentation to the city council to date. It will be remembered that there was considerable discussion of the proposed provision for securing a permit to make a multiple installation, the same as is required at present for boiler installations. The question was brought up and discussed at a conference of interested engineers' representatives called by Smoke Commissioner Whitlock last year.

While Colonel Whitlock indicates that he expects to stand by this provision, he is at present engaged in considering a number of possible changes in the proposed law, looking toward getting it before the city council for action within the next two or three months. Revisions are said to be based principally on the New York City code, although Health Commissioner H. L. Rockwood's recommendations based on the survey of manufacturers just completed will no doubt have some bearing on the final draft.

Forty-Three Manufacturers Send In Refrigeration Data

The survey was made at the direction of Dr. Rockwood, by Dr. H. J. Knapp chief of Laboratories for Food and Drug Control, with a view to collecting authentic data coming within the jurisdiction of this section of the health department. A list of 18 questions was sent out to 80 manufacturers of refrigerating equipment. So far 43 have replied in considerable detail.

Perhaps one of the most pertinent questions in the questionnaire to the jurisdiction of the health department was: "What is the possibility of injury to occupants of buildings where your machine is installed by a slow release of the gas you use over a long period of time?"

In summing up the replies in a tabulation made from 25 of the leading manufacturers on this particular question, which was all that were in at the time the chart was made up, Dr. Knapp says, "As to the danger inherent in the slow release of gases, no satisfactory information could be obtained except that embodied in a recent bulletin from the Chicago health department."

However, one question, "What is the possibility of injury to occupants of buildings where your machine is installed by the sudden release of the gas you use?" very thorough answers were given. One manufacturer admitted asphyxiation would result unless person reached fresh air, but went on to explain that the gas could be immediately detected by its odor.

Others went into considerable detail to explain the exact effect and safety devices which have been provided to prevent the possibility of accident. And there were some who pointed out that the small amount of refrigerant used was insufficient to offer any danger.

Tabulates Gases Used In Various Machines

The refrigerating gases reported as used by the 25 manufacturers on which the tabulation was made are: Ammonia, carbon dioxide, sulphur, methyl chloride, ethyl, butane, isobutane; in secondary refrigerating systems, brines consisting of calcium chloride, mixtures of alcohol and calcium chloride or mixtures of sodium and calcium chloride.

Another question that doctors Rockwood and Knapp consider of particular importance to interests of the Food and Drug Control section of the Health Department was, "What is the possibility under actual operation of the contamination of foods by the gas employed in your machines?"

Dr. Knapp says about the replies received in answer to this question: "As to the possibility of food injury due to contamination by refrigerants, including brine, all replies in the returned questionnaires imply that such food could be rendered unpalatable. The sole exception to this would be carbon dioxide."

One manufacturer stated that the carbon dioxide used would actually improve any food subjected to it, but of course the gas was not wasted for that purpose. The majority of these answers ran from "mostly no effect," "slight," or "negligible," to "some contamination possible but bad effect could be readily detected by taste."

Other questions dealt with pressures under which systems operate; possibility of the leakage of brine, where used, into food products; the effect of such leakage on such food products as milk;

type of piping used; type of joints; care used in protecting connecting pipes from mechanical injury if machine is separate from the refrigerating unit. A number of questions were designed primarily to enable the health department to classify, for their own study, the manufacturers of different types of equipment.

In addition to this survey of manufacturers, the health department has collected data from The American Society of Refrigerating Engineers, The National Board of Fire Underwriters, The National Association of Ice Industries, City Clerk of Chicago, and *ELECTRIC REFRIGERATION NEWS*.

The purpose of the whole study by the Cleveland health department, according to Commissioner of Health H. L. Rockwood, is to build up a file of accurate information from the health angle on the subject of refrigerating equipment, particularly of the multiple type. Dr. Rockwood points out, as does Dr. Knapp and Colonel Whitlock that the single home unit has been given very little thought since it is pretty generally conceded that

QUESTIONS ASKED BY HEALTH DEPARTMENT OF CLEVELAND

1. Do you make machines for single house installation?
2. Do you make machines for apartment installation?
3. Under what name or names are your machines known?
4. Under what pressures do they operate?
5. What gas do you use as a refrigerating agent?
6. Is this the gas used in all installations?
7. What other gases are used, if any?
8. Does your machine operate on the brine circulating principle?
9. If so, what is the type of brine employed?
10. What is the possibility of injury to occupants of buildings where your machine is installed by the sudden release of the gas you use?
11. What is the possibility of injury to occupants of buildings where your machine is installed by a slow release of the gas you use over a long period of time?
12. What is the possibility under actual operation of the contamination of foods by the gas employed in your machines?
13. What is the effect on a food product such as milk by a possible leakage of the gas used?
14. If you use a brine system what is the possibility of leakage of this brine into food products?
15. What is the effect on a food product such as milk by a possible leakage of such brine into such food products?
16. What type of piping do you use?
17. What type of joints do you use?
18. What care do you use in protecting connecting pipes from mechanical injury if the machine is separate from the refrigerating unit?

the small amount of gas used offers no particular hazard.

For the information of Smoke Commissioner Whitlock whose responsibility it is to present a safety code governing the installation and operation of multiple units in particular to the city council this fall for their consideration, as well as to enforce whatever ordinance may be passed, Dr. H. L. Rockwood expects to make some general recommendations in addition to making the results of the health department's survey available to him.

"My recommendations," says Dr. Rockwood, "shall not be specific in any respect, but rather generally point out what I consider important in connection with type of installation in the case of multiple units, supervision of installations, and constant inspection."

Great Lakes Division N. E. L. A. To Hold Annual Convention at French Lick, Ind.

The ninth annual convention of the Great Lakes Division of the National Electric Light Association will be held at French Lick, Ind., Sept. 26-28. A number of interesting subjects are planned for the meeting. Sound pictures covering the Atlantic City convention will also be presented.

Correction

In the August 14 issue of the *News* on page 19 appeared a story entitled "Oklahoma City Adopts Multiple Code Asked By Refrigeration Men" in which the name Kelvinator was omitted from the list of representatives who worked out the code. Representatives of Kelvinator in Oklahoma City started the move for a safety code in that city.

KELVINATOR CORP. HOLDS 3RD ANNUAL GOLF MEET

Kelvinator Corp., Detroit, held its third annual golf tournament at the Hawthorne Golf Club on August 20. More than seventy-five players competed in the tournament, including a number of Leonard men from Grand Rapids, Mich. The day was climaxed with a banquet at which H. W. Burritt acting as toastmaster awarded the prizes. A. H. Goss, former Kelvinator president and chairman of the board, also spoke at the banquet.

The winners were: first low gross prize, J. M. Fernald, golf bag and cup; second prize, J. S. Sayre, leather Karry-All bag; third prize, B. A. McDonald, leather brief case; first low net prize, Edward Heitman, gladwin bag and cup; second prize, G. V. Egan, traveling bag; third prize, Edward Tohey, Karry-All bag; fourth prize, R. L. Matters, bill fold.

The kickers prize, a leather suitcase, was won by H. A. Sieck, while W. B. Charlton, received a jacket for first high gross score. H. McPhillips was the winner of the guest's low gross prize, a dozen golf balls.

Carr Home Appliances, Inc., Formed In Binghamton, N. Y.

Carr Home Appliances, Inc., Binghamton, has been formed to deal in electric refrigerators, etc. Gordon F. Carr, Leonard S. Zirkle, 135 Chapin St., Ralph E. Cohee, 160 Chapin St., Binghamton, are officers.

Correction

On page 20 of the July 17 issue of the *News* appeared an article under the heading "Electrolux Dealer Caters to Church Organizations in Cincinnati" reference was made to an Electrolux model EL-20 instead of model EL-10.



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176 "BC" Copper, per pkg. 3.75 176 "BM" Monel, per pkg. 5.50

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6645 S. Halsted Street, Chicago, Illinois.
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27 Haymarket Square, Boston, Mass.

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109 Wood Street, Pittsburgh, Pa.
2500 Derbyshire Road, Sta. No. 2, Cleveland, Ohio.
153 So. Labrea Avenue, Los Angeles, Calif.
3146 Olive Street, St. Louis, Mo.
122 Hopkins Place, Baltimore, Md.
3140 Beekman Street, Cincinnati, Ohio.

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AUGUST 28, 1929

Let Us Have Facts

ANYONE who has been following the march of events relating to refrigeration in Chicago during the past several weeks cannot help but notice how the lack of facts has been the biggest obstacle in the path of those who are trying to evolve a safety code. Many and diverse are the forces represented there: manufacturers of multiple systems, manufacturers of single units, and manufacturers of both; steam fitters, plumbers and builders; health, boiler inspection, fire prevention, engineering and legal departments of the city administration; engineers, chemists and icemen. All have interests to defend; many have axes to grind; some have livelihoods at stake.

Quite naturally these conflicting interests are at odds. Scarcely a statement is made that someone does not rise to dispute. The aldermen, sitting as a jury, find themselves completely at sea. Unable to determine the merits of the various propositions they are forced to depend upon their judgment of people; to pin their faith to those who seem to be most sincere and competent, most nearly representing the interests of the city. Why is the situation so muddled? Because nobody has all the facts.

At first the arguments revolved around refrigerants. The industry has long been divided into two camps on this subject but it remained for Commissioner Kegel to establish facts apparently unknown to either side. Next came the discussion of a suitable warning agent for odorless gases. A question mark still remains after that problem, with chemists arguing from positions miles apart, because they do not have the facts. Multiple systems were placed on trial, and bitter debates followed. No decision has been rendered, simply because neither side has sufficient evidence to prove a case. Just now Commissioner Kegel's "yardstick of safety" is the burning question. Capable engineers, pioneers in the development of refrigeration, have affirmed that multiple systems can be devised to pass the test, and have produced plans to prove it. Other engineers, in high position and with long experience, assert that the proposed devices are impracticable. Nobody knows for sure because facts are lacking.

The "battle royal" at Chicago is only one instance of the conflicts going on in the industry. Another example is the fight over the National Food Preservation Council's slogan that "fifty degrees marks the danger line" in food preservation. The icemen, who apparently lack confidence in their ability to meet the thermometer test, say that so low a temperature is unnecessary. Manufacturers, whose big selling point is that their machines will produce near-freezing temperatures, claim that fifty degrees is too high. Authorities are quoted by both sides, but neither has sufficient data.

So many question marks clutter up the book of refrigeration that one must conclude that the biggest need of the industry is research. Now, the industry may be excused for its disagreements because of its youth, but the public will soon tire of the squabbles. Stockholders and directors will insist on bigger and better men whose statements will inspire confidence in and out of the industry. Moreover, the Chicago situation has demonstrated how expensive and time-wasting these arguments are. It is probably a conservative estimate that the efforts to secure a safety code have already cost the industry well over a million dollars in salaries, traveling expenses and loss of productive activity.

Few industries have started out with so promising an outlook as the electric refrigeration industry. The accomplishments so far have only served to brighten the future and to expand the horizon toward which the farseeing executives can train their vision. Almost limitless are the possibilities for development in the field of health protection by refrigeration. No industry has a greater opportunity to serve humanity. Standing on the threshold of unrivaled prosperity, filled with a multitude of conscientious workers, backed by powerful financial groups, and eminently sound as a business because it meets a basic need, the industry is hampered in its realization of success by the lack of knowledge.

If possession of the facts will effect the happy combination of peace, progress and prosperity, then the sooner that the industry maps out a program of research the sooner can electric refrigeration come into its own. There are several avenues to research open to the industry and all should be used. The scientific schools and engineering colleges represent one opportunity for the establishment of research activity which should be given immediate attention.

Five hundred dollars spent to set up a research fellowship in one of the engineering colleges will put a postgraduate student to work for a year on one important problem and will, in most cases, result in a thesis which will add to the authoritative literature on which the industry may base its future progress. The industry can well afford to establish 50 or 100 such fellowships in selected schools all over the United States. Electric Refrigeration News presents this suggestion for the consideration of the industry. The meetings of associations and societies, as well as the columns of the News, offer a ready means for developing the program.

Letters to the Editor

CAN MULTIPLE SYSTEMS BE MADE SAFE?

SERVEL, INC.

Evansville, Indiana.

August 20, 1929.

Electric Refrigeration News,
Detroit, Michigan.

On Friday, August 9, Dr. Arnold H. Kegel, Health Commissioner of Chicago, submitted the draft of a safety ordinance which provided that no multiple system would be permitted in a multiple dwelling, from which more than two pounds of refrigerant could escape in any one apartment—or more than ten pounds in the basement, during a period of 12 hours, under any conditions.

The manufacturers, while not denying that such a system might be developed, endeavored to prove it to be impracticable on account of the alleged necessity of employing numerous delicate devices which, in themselves, would constitute a serious hazard.

As a consequence of this, I gave the matter some thought which resulted in writing an article for publication in your paper. This article was entitled—"Can Multiple Systems be Made Safe?" The article appeared in your issue of August 14 under the caption—"Williams Presents Multiple Plan Conforming to Kegel's New Code." From this caption one would be led to think the problem had been fully solved. Actually, this entire effort was in the way of a suggestion as to one of possibly many means of making these systems safe within Dr. Kegel's requirement.

This is evidenced by the following, quoted from the article.

"To point the way toward means whereby such systems may possibly be installed and successfully operated on twenty pounds or less of refrigerant, the accompanying diagram is submitted. It should be understood that this was gotten up hurriedly and is only offered at this time in the way of a suggestion and with the hope that it may serve to stimulate research and development that will ultimately produce a degree of safety that will entirely eliminate all possible danger from these systems in apartment homes."

"There are, doubtless, other and perhaps better and simpler ways of accomplishing the results aimed at herein, and it is hoped that the inventive talent of this highly technical industry will get busy to find them in the least possible time."

Unfortunately, as a result of the great haste in which the diagram of the suggested system was prepared, a serious error was made in placing the solenoid valve SV-1 between the system and the suction pressure control while the intention was to locate the solenoid valve next to the compressor and place the suction pressure control in the suction line, between the valve SV-1 and the manifolds M-1 to M-6, rather than on a branch of this line as shown.

I am sending, herewith, a corrected diagram of this system. This diagram also shows a solenoid valve in each branch of the main suction line between the suction line and the suction manifold. These are numbered respectively SV-3 to SV-8 inclusive. It further includes a float switch in the liquid line between the receiver and the manifold M-7. This, however, is not actually

needed as the low pressure switch L-1 on the high pressure side of the system would perform the same function when the liquid refrigerant is exhausted from the receiver. It simply shows another method, or an auxiliary to the original methods shown, of closing all valves and shutting down the compressor whenever a leakage of refrigerant occurs, amounting to approximately two pounds.

In view of the description of the operation of these devices, printed in the original article, it seems hardly necessary to explain further the various operations of the several parts.

A leak of any considerable volume will cause the safety features to act quickly, and there should be no difficulty about controlling that character of leak. The small leak, however, presents a more difficult problem. However, it is believed that even with that character of leak the system will function successfully when approximately two pounds of refrigerant has escaped.

I would appreciate it very much if you would publish this corrected diagram, together with this explanatory letter, in the next issue of your paper.

Yours very sincerely,

E. T. WILLIAMS.

CHICAGO SITUATION WILL BENEFIT INDUSTRY

NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION,

New York

August 23, 1929.

Electric Refrigeration News,
Detroit, Michigan.

EVER alert to the possibilities of publicity, Chicago has temporarily transferred its civic interest from gang-warfare to electrical refrigeration. Led by the well-known Dr. Arnold H. Kegel, City Commissioner of Health, the Chicago city fathers have taken upon themselves the job of adding a complete refrigeration ordinance to its law-enforcement program. There is no doubt that out of the over-publicized Health Department activity will evolve a set of rules and regulations for the installation and maintenance of electrical refrigerators which will insure public safety and place the seal of official approval on every household electrical refrigerator, whether of the individual unit or the multiple installation. The result of the publicity which has attended the Chicago legislation, is a nation-wide awakening to the fact that a municipal refrigeration ordinance should have just as recognized a place in the laws of the municipality as the fire ordinance. While it is regrettable that there have been accidents and even more regrettable that published accounts have been frequently garbled and misleading, a great good to the industry, and a decided benefit to public health is bound to result. People who have never before thought of proper food preservation are now "temperature conscious" to a degree which would never have been so quickly attained through paid advertising space.

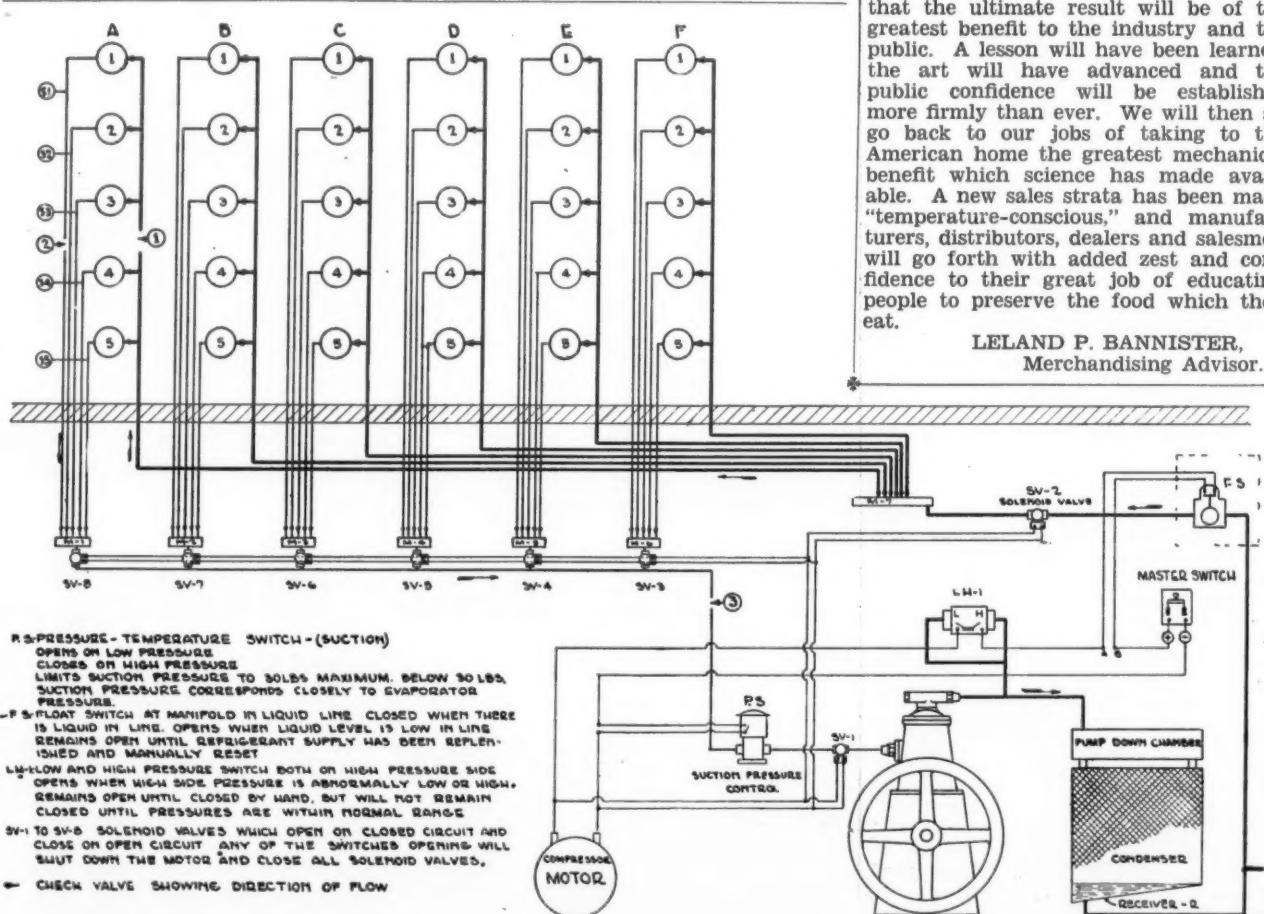
Considering that there are now estimated to be more than two million electrical refrigerators in use, the known fatal accidents constitute only a negligible percentage, particularly when the comparison is made with accidents associated with illuminating gas, electricity, automobiles and other normally harmless commodities. The public, as a whole, has been relatively ignorant of the benefits of electrical refrigeration, for the industry is yet in its rompers, and that sudden news of possible hazards should be avidly snatched by newspapers is not in itself remarkable. What is remarkable is the fact that it should take a few isolated accidents to make the American public set up and become

"temperature conscious." Authorities in Washington, in their official wisdom, declined to enter into the ruckus, simply making the statement that the percentage of accidents thus far reported was not sufficiently great to warrant alarm and that the entire affair is a matter to be worked out by municipalities in cooperation with manufacturers.

In the meantime, the point should be well emphasized that the electric refrigeration industry has by no means been caught napping. After several years of progressive work at industry organization, the major refrigeration manufacturers banded together as a division of the National Electrical Manufacturers' Association, thus obtaining the benefit of trained assistance and years of experience in problems vital to the progress of the industry. Recalling the history of the National Electrical Code and the part played in its development by NEMA, the first job that the Refrigeration Division undertook was that of drafting a safety code. The Technical Committee of the Division is composed of such eminent refrigeration engineers as Glenn Muffly, E. T. Williams, A. R. Stevenson, Jr., C. C. Spreen and Harry C. Hayes. These men have devoted practically their entire time to drafting a safety code since the appointment of the committee early in May. Let there be some misunderstanding as to the time which has been taken in this highly important work, it must be pointed out that the matter is not one to be accomplished over night, for it requires exhaustive research, tests and deliberation. At the time of the announcement of the first accidents in Chicago, the NEMA draft for recommendation to the American Standards Association was practically complete and constituted the best thought and almost unanimous approval of the engineers who developed it. While the provisions incorporated early in July constituted the earnest effort and honest opinion of the most highly trained minds available, the Chicago accidents showed clearly that unexpected and hitherto unrecognized conditions would have to be met before the code could be recommended to the reviewing committee. Ever anxious to uphold the high standards of safety and efficiency, which are the watchwords of the engineer's routine, these men unquestionably set about the revision of the draft which was already the result of many tiresome hours of conference and engineering tests. Realizing the necessity of keeping safeguards an ample margin in advance of conditions of usage, the committee immediately set about drafting a new code which would fully meet the difficult safety requirements of multiple installations and which would advance the art even beyond the requirements of the newly recognized hazards. While engineers frequently entertain honest differences of opinion, which are due to different experience and opposing ideas in experimental evidence, there has never been any question but that the technical minds of the industry were willing and anxious to cooperate with the Chicago officials in properly safeguarding the electrical refrigerator in the home. In addition to playing the most prominent part in the work still in progress in Chicago, the Technical Committee of the Refrigeration Division of NEMA has had to carry the additional burden of formulating a safety code which might later be widely adopted, and made effective through a recommended uniform ordinance for nation-wide municipal adoption.

As this article is being written, the engineering talent of the entire refrigeration industry is in conference in Chicago with the Health Committee of that city, endeavoring to cooperate with the demands of the city officials that installations of all types be adequately safeguarded. Whether all or part of the necessary provisions are decided upon today or next month, the fact remains that the ultimate result will be of the greatest benefit to the industry and the public. A lesson will have been learned, the art will have advanced and the public confidence will be established more firmly than ever. We will then all go back to our jobs of taking to the American home the greatest mechanical benefit which science has made available. A new sales strata has been made "temperature-conscious," and manufacturers, distributors, dealers and salesmen will go forth with added zest and confidence to their great job of educating people to preserve the food which they eat.

LELAND P. BANNISTER,
Merchandising Advisor.



LESLIE KING DEFENDS SPECIALTY SALESMEN

Note—The address below was given by Leslie I. King, sales manager of the Cushman Refrigerator Co., General Electric distributors at Cleveland, before a local sales managers' club and the Cleveland Electrical League. It was given in answer to an editorial which appeared in a Cleveland paper decrying the activities of specialty salesmen.—Editor.

LITTLE has been said in public about the virtue of the selling profession, yet as we analyze the nation's business, we find the mass of high grade, intelligent keen operators are salesmen, probably contributing the greatest amount of energy to the nation's commerce of any single profession in existence.

I wonder if all the salesmen in the United States would take a vacation for 90 days what would happen. Probably we would have no need for railroads, or other methods of transportation, if we had not sold anything in that period of time. Reflect, if you will on bank clearances, if all selling should cease for the same period of time. Then give the salesman credit for the important part he has played in this great drama.

Do you know that there are a greater number of men engaged in the selling profession, who accept the greatest number of people in their confidence and who have been accepted in the confidence of a greater number of people than any other profession, that is active daily?

If this be true, the man educated to be a salesman must be patient, honest, must be able to analyze and locate the buying power. He must find the motive of purchase. He must supply his prospective purchaser with suitable merchandise at the right price. He must be a student of psychology. He must be faithful and loyal to serve the mutual and common interest of a nation of smart people.

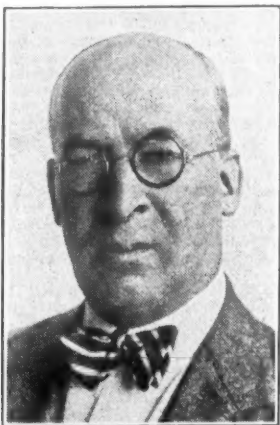
There are many qualities he unconsciously possesses. By coming in contact with the world's best people, he absorbs the qualities, many of which are unknown to him or his wife.

Could he make an analysis of himself and realize to be a successful salesman he must carry on the many principles necessarily involved, he would find somewhere in his make up that he is a man who can manage well the circumstances which he encounters day by day and can possess a judgment which is reasonable, accurate, in meeting occasions as they arise, and rarely misses the expedient course of action.

He is among those who are decent and honorable in intercourse with his fellow man, bearing easily and good-naturedly what is unpleasant or offensive in others, and very important to him is the quality that will not permit him to be spoiled by success and who will not desert his true self but hold his ground steadfastly, as wise and sober minded men do. He will find that he has character which is in accord not with one of these things, but with them all. This, I believe, is a just diagnosis of the basic mass of good men who so faithfully contribute their services to the nation in the selling profession and who should be given just acclamation.

SERVEL AWARDS 34 PRIZES IN FREE FOR ALL SALES CONTEST

Charles T. Abell, of the William J. Bittles Co., Newark, N. J., has just been announced as the winner of the Servel Free-for-All Sales Contest which just closed. Mr. Abell has been awarded the President's prize, a Servel model D-5, and



Charles T. Abell

in addition a first prize consisting of \$100 worth of merchandise.

A total of thirty-four salesmen received prizes in the contest. Twenty men won first prizes amounting to \$100 each, nine secured second prizes of \$80 each, and five attained the third prize group and \$60 in awards.

The following is a complete list of all prize winners: First Prize: Charles T. Abell, Wm. J. Bittles Co., Newark, N. J.; S. B. Poteate, Virginia Electric and Power Co., Norfolk, Va.; Alex Beantley, Memphis Power and Light Co., Memphis, Tenn.; W. B. Evans, Arkansas Power and

Buffalo Distributor Uses "Teaser" Ads To Announce Formal Opening



Opening Display of Bico Sales Co., Buffalo.

The value of a well-rounded out advertising and publicity campaign to announce a formal opening was demonstrated recently by the Bico Sales Co., Buffalo distributors for Copeland Products, Inc.

The campaign consisted of three "teaser" ads in the newspapers the week before the opening and a larger spread on the day preceding and on opening day; a letter announcing the opening and endorsing iceless refrigeration by a leading women's club sent out to 10,000 women, and artistic decoration of the showrooms and display window. The results were 300 persons in the showrooms and six sales on opening night; sustained attendance and daily sales during the remainder of opening week, and the taking on of three new dealers and increasing the sales force to 12 full-time and 3 part-time men. Costs of the campaign were wiped out by the initial 2-day sales. One of these was the women's club president who signed the announcement letter.

The "teaser" ads were 3 column by 4 inches of the "Stop, Look, Listen" type, numbered in series and Bico signed and carrying relatively little copy that only hinted at the undated formal opening, a new line of Copeland cabinets and the giving away of a refrigerator. The large spread, 4 columns by 12 inches, announced the opening and the new Copeland A-5 special models and invited the reader to come in and receive details on the gift Copeland.

The showroom decorations featured a Copeland unit under a day-blue light in the main window surrounded by imitation icicles, snow and ice that attracted and allured in the hot July weather, while the showroom interior revealed Copeland boxes ranging along the walls, with baskets of flowers on some and waving toy balloons on others, a big floral piece on a center table covered with literature and colored crepe festooning the ceiling.

"We believe we struck the right note in our method of announcing our own formal opening and the introduction of the new Copeland series," says Vice President R. S. Sample of the Bico Co., "and have made Buffalo's refrigeration buying public permanently conscious of Bico and Copeland."

Light Co., Little Rock, Ark.; H. M. Ponder, Ponder Bros., Tacoma, Wash.; L. M. Pemberton, Capital City Paper Co., Springfield, Ill.; L. P. Quinn, Becker-Marsden Co., St. Louis, Mo.; C. B. LaRocque, Wm. J. Bittles Co., Newark, N. J.; Dewitt Pike, Rochester Gas & Elec. Co., Rochester, N. Y.; C. F. Bennett, Virginia Electric and Power Co., Richmond, Va.; R. A. Cresse, Pennsylvania Power and Light Co., Allentown, Pa.; R. B. Ludlow, Edward Schuster and Company, Inc., Milwaukee, Wis.; I. E. Couch, Ponder Bros., Tacoma, Wash.; G. W. Turley, J. H. Bowen Co., Greenville, Miss.; D. B. Hart, Electric Refrigeration and Appliance Co., Henderson, Ky.; F. B. Wilbur, Wm. J. Bittles Co., Newark, N. J.; T. B. Moats, Odell Hardware Co., Greensboro, N. C.; H. F. Seward, Leeson, Leaverton Co., San Bernardino, Calif.; J. Trautner, Wm. J. Bittles Co., Newark, N. J.; C. M. Meriwether, Memphis Power and Light Co., Memphis, Tenn.

Second Prize: Edward M. Lynch, Frank Reinemund Co., San Diego, Calif.; H. C. Pearce, Wm. J. Bittles Co., Newark, N. J.; W. E. Lee, Odell Hardware Co., Greensboro, N. C.; R. E. Durham, Becker-Marsden Co., St. Louis, Mo.; W. C. Hughbanks, Southern Indiana Gas & Electric Co., Evansville, Ind.; T. T. Marshall, Southern Indiana Gas & Electric Co., Evansville, Ind.; G. W. Brown, Southern Indiana Gas & Electric Co., Evansville, Ind.; H. P. Brown, Odell Hardware Co., Greensboro, N. C. Third Prize: Miss Vada Archer, Ponder Bros., Tacoma, Wash.; George McCully, Capital City Paper Co., Springfield, Ill.; A. U. Burckhart, M. O'Neill Co., Akron, Ohio; F. E. Davenny, F. E. Davenny Maytag Co., Ashtabula, Ohio; C. S. Finley, Alabama Power Co., Tuscaloosa, Ala.

Less than 1 per cent of the entire railroad mileage of the United States is electrified.—N. E. L. A. Bulletin.

Ruddy Mfg. Co. Buys Factory in Brantford, Canada

The Ruddy Mfg. Co., Brantford, Canada, recently purchased the property adjoining its factory on Elgin St., formerly occupied by the Blue Bird Corp. The building which contains approximately 50,000 square feet of floor space, has been remodeled to take care of increased production of commercial refrigerators, ice cream cabinets and soda fountain equipment.

precision built **MOTOR, TRANSMISSION, ECCENTRIC and CRANK SHAFTS**

MADE TO YOUR SPECIFICATIONS. SEND US YOUR BLUE PRINT — WE WILL SEND YOU OUR PRICES.

MODERN MACHINE WORKS, INC.
196 MILWAUKEE STREET, MILWAUKEE, WISCONSIN

This is a National Message to the American Housewife

Get the most out of your
ELECTRIC, GAS or ICE Refrigerator

Send \$1.00 for the two big 50c rolls (West of Missouri and South Coast States 60c per roll, both for \$1.20 postpaid).
FREE: When ordering mention this ad for a Miracle Paper Dish Rag and interesting samples for You and Your Friends.



STANDS FOR "THE WORLD'S MODEL PAPER MILL"
KALAMAZOO VEGETABLE PARCHMENT CO.
KALAMAZOO MICHIGAN U.S.A.
MANUFACTURING WORLD-WIDE FAMOUS FOOD PROTECTION PAPERS

YOUR refrigerator will serve exactly and according to intelligent use and operation, and your palatable, health building foods will speak for themselves when served.

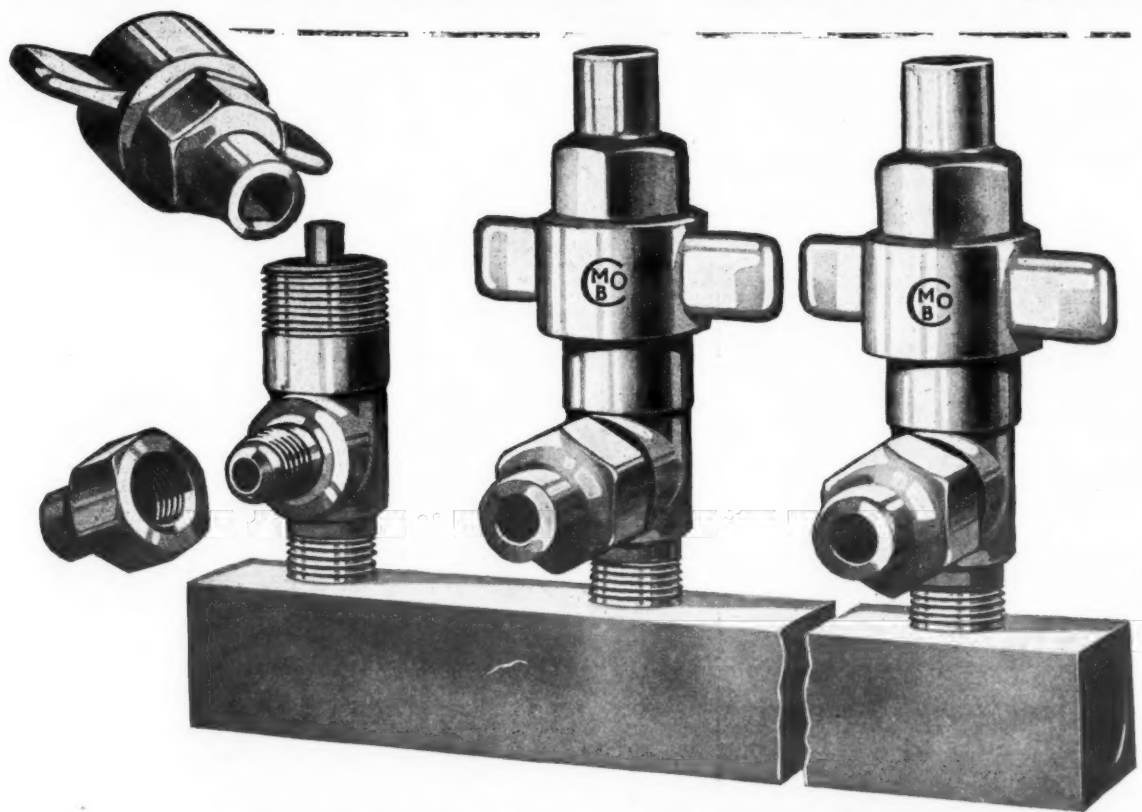
Are you using both KVP Refrigerator Papers? Try the famous pair—Heavy Waxed Paper in "Cutter Box"—it seals tight (one sheet will do) keeps the moisture in or keeps the moisture out as desired. However, remember all foods should not be wrapped in Waxed Paper—for 100% results you also need KVP Household Parchment, the waterproof paper for cooking and for wrapping all moist, greasy and wet foods—a cheesecloth substitute (you can boil it) like a rag when wet—use it again and again—it wears.

Try your Grocer, Stationer, Hardware, Department Store and Neighborhood Merchant first; if they cannot serve you KVP will pay the parcel post.

If you are in any way interested in Electric or Gas Refrigeration
...read the above over twice because it will mean much to you... this is our National message to the American Housewife in cooperation with your refrigerator sales campaigns. Write for samples and advertising ideas that sell your refrigerators to new customers and keep old customers interested.

YOU TAKE NO CHANCES ON GAS SEEPAGE
in your multiple installations when you use

THE MUELLER MANIFOLD



MUELLER MANIFOLD FOR MULTIPLE INSTALLATIONS

This Manifold is furnished with 1/4 in. 3/8 in. or 1/2 in. angle valves which are securely sweated to the header. The header is of a special alloy, seamless drawn, square brass tubing. It is designed particularly to withstand high pressure.

Mounting clips are furnished with each set.

Flared tube nuts are assembled on each outlet at the time of making to afford protection for the accurately machined seats and to insure perfect contact for the tubing.

Valves are equipped with combination wing seal cap and wrench for convenience of operation and safety when not in use.

WE MANUFACTURE A COMPLETE LINE OF VALVES AND FITTINGS AND CAN SUPPLY YOUR EVERY REQUIREMENT.

Send us samples or blue prints for quotations.

Mueller Brass Co.

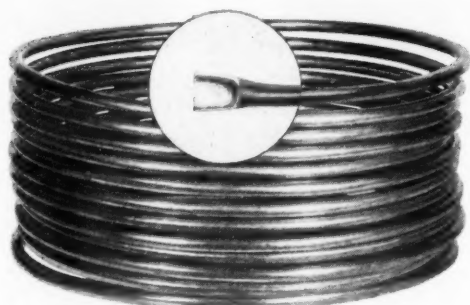
PORT HURON, MICHIGAN

THREE GENERATIONS OF BRASS MAKING.

Seamless Copper Tubing

Specially Tested and Dehydrated
for Refrigeration Work

Made to A. S. T. M.
Specifications (B 68-27T)
Quick Delivery



Our model plant covers five acres—our organization is above par—our products stand in a class alone.

We Want To Quote Where Quality Counts

WOLVERINE TUBE CO.

SEAMLESS COPPER BRASS & ALUMINUM



1431 Central Ave., Detroit, Mich.
Phone Cedar 5000

Sales offices in all major cities. Write or phone for name of nearest representative.

Seepage Proof Tube Fittings

Complete catalog of fittings for refrigeration industry sent on request.

Ask for Catalog No- 36

"Built Right—to Stay Tight"

Commonwealth Brass Corporation

COMMONWEALTH AVE. AND G.T.R.R.
DETROIT, MICHIGAN.

Refrigeration Patents Issued

NOTE—The refrigeration patents listed below were obtained from the Official Gazette of the United States Patent Office. This list contains a selection taken from the refrigeration patents that have been issued March 13 to August 13, inclusive.

Past issues of the News containing lists of refrigeration patents, previously issued, are:

March 2, 1927—page 6.
March 16, 1927—page 6.
March 30, 1927—page 6.
April 13, 1927—page 6.
May 25, 1927—page 16.
July 6, 1927—page 6.
July 20, 1927—page 9.
Jan. 4, 1928—page 28.
Jan. 2, 1929—page 26.
March 13, 1929—page 33.

Issued March 12

1,704,980—REFRIGERATED ICE CREAM CONE SERVER. Gus J. Larrabee, Platte City, Mo., assignor of one-fourth to Amon Deal, one-fourth to A. F. Gossel, and one-fourth to D. R. Clevenger, Platte County, Mo. Filed Aug. 8, 1927. Serial No. 211,301. 6 Claims. (Cl. 62-75.)

1,705,106—TEMPERATURE CONTROL. Charles L. Bastian, Chicago, Ill., and Ralph L. Farnham, Grand Haven, Mich., assignors to The Bastian-Blessing Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 21, 1925. Serial No. 3,827. 5 Claims. (Cl. 62-4.)
4. In a device of the class described, a plurality of compartments, an insulated wall between two of said compartments, a pair of openings in said wall, a pair of rigid independent levers mounted on said wall, a valve for each of said openings connected to one end of each lever, expandable means cooperating with the other end of said levers to simultaneously open each of said valves laterally, and a spring oppositely disposed to said expandable means for moving said levers to close both of said valves.

1,705,117—LIQUID COOLER. Henry J. Irwin, Jersey City, N. J., assignor, by mesne assignments, to Crown Cork & Seal Company, Inc., New York, N. Y., a Corporation of New York. Filed June 16, 1926. Serial No. 116,412. 3 Claims. (Cl. 62-147.)

1,705,460—REFRIGERATING UNIT. Robert N. Cooper, Bloomington, Ill., assignor to Walter W. Williams, Bloomington, Ill. Filed Oct. 27, 1927. Serial No. 229,009. 2 Claims. (Cl. 62-65.)

1. A refrigerating unit comprising hollow spaced apart side sections for containing the refrigerating fluid, a tubular spacer interposed between said sections at the bottom and communicating with the interior thereof, a float valve chamber, a tubular boss depending therefrom corresponding in width to said spacer and interposed between said sections at the top and communicating with the interior thereof and with said chamber, a float and float-operated valve within said chamber for controlling the admission of the refrigerating fluid.

Issued March 19

1,705,573—BOTTLE REFRIGERATOR. Samuel Kaye, Columbus, Miss. Filed May 24, 1926. Serial No. 111,176. 7 Claims. (Cl. 312-36.)

1. A cooler for bottles comprising a refrigerant container, a channel in said container adapted to receive and guide a plurality of bottles side by side in an upright position, said channel being vertically accessible at each end, a reciprocal slide cover for said channel normally closing each end of the channel against accessibility and arranged when reciprocated in one direction to render the channel accessible for the insertion of a bottle at one end and the removal of a bottle from the opposite end and means operated by the closing of the cover for moving the bottles toward the removal end of the channel.

1,705,756—REFRIGERATOR. Chester A. Frick, Muncie, Ind., assignor to Glascock Brothers Mfg. Company, Muncie, Ind., a Corporation of Indiana. Filed Nov. 16, 1927. Serial No. 233,532. 2 Claims. (Cl. 220-16.)
2. A bottle refrigerator comprising an outer casing and an inner receptacle, the walls of which are suitably spaced and the spacing filled with insulating material, means for dividing said receptacle into two compartments comprising a transversely extending removably mounted divider plate, an independent cover for each of said compartments and the upper edge of the plate fitting between said covers and having means for supporting the adjacent edges of said covers and means for longitudinally dividing one of said compartments into bottle runways comprising longitudinally extending members removably connected to the bottom of said dividing member and to the front wall of said receptacle.

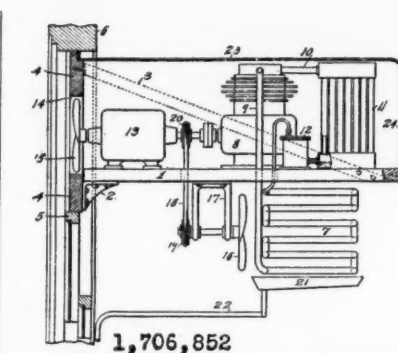
1,705,764—REFRIGERATION SYSTEM. George Hilger, Chicago, Ill. Filed Dec. 24, 1925. Serial No. 77,444. 5 Claims. (Cl. 236-92.)

1. A regulating valve for refrigeration systems having two opposed pressure elements one arranged to be subjected to the pressure of the refrigerant flowing through the valve and the other element and the pressure in either chamber being independent of the pressure in the other chamber, and valve means operable by the effective pressure differential between the two elements, the smaller pressure element having spring means operatively associated therewith coacting with the pressure on the smaller element to balance at a predetermined point the pressure on the larger element.

1,705,765—VENTILATING SYSTEM. George Hilger, Chicago, Ill. Filed Mar. 4, 1927. Serial No. 173,850. 7 Claims. (Cl. 62-2.)

1,705,772—COMPRESSOR. Leonard J. Kimmel, Spokane, Wash., assignor to Electro-Kold Corporation, Spokane, Wash., a Corporation of Washington. Filed Feb. 8, 1926. Serial No. 86,713. 1 Claim. (Cl. 230-172.)

1,705,914—REFRIGERATOR. John Edward Gloekler, Pittsburgh, Pa. Filed July 13, 1926. Serial No. 122,093. 3 Claims. (Cl. 62-39.)
1. The combination with a refrigerating chamber having surrounding back, side, top, and bottom walls, with a vertical sheet metal partition extending forwardly from the back wall with its upper edge spaced below the top wall, and a removably mounted transverse drip pan



extending from the lower inner bottom portion of said partition towards the side wall with an intervening space thereby providing upper and lower diagonally located air circulation openings, and a refrigerating unit suspended in said chamber having removable ice containing holders; of a front wall of the full depth of said partition extending therefrom to the side wall provided with an opening for access to said chamber, and an outer removable covering plate therefor having a finger opening.

1,705,928—METHOD OF AND APPARATUS FOR PREVENTING THE CONDENSATION OF MOISTURE ON THE EXTERIOR SURFACE OF REFRIGERATOR CABINETS. Albert L. Lambert, Narberth Borough, Pa., assignor to Heinz Manufacturing Company, a Corporation of Pennsylvania. Filed May 20, 1927. Serial No. 192,861. 15 Claims. (Cl. 62-31.)
1. The method of preventing condensation on the exterior surface of the wall of a refrigerator cabinet, which consists in causing a layer of air from the outside atmosphere to sweep downwardly across the inner surface of the wall by exposing the layer to a zone of lower temperature within the wall, and causing the layer to pass into the outside atmosphere before becoming lowered in temperature to the point of reducing, by carrying off heat from the wall, the temperature of the outer surface of the wall to the dew-point of the outside atmosphere.

1,705,942—VALVE. Julius C. Moody, Franklin, Pa., assignor to Chicago Pneumatic Tool Company, New York, N. Y., a Corporation of New Jersey. Filed Feb. 4, 1928. Serial No. 251,809. 6 Claims. (Cl. 251-119.)

1,706,941—VALVE. Julius C. Moody, Franklin, Pa., assignor to Chicago Pneumatic Tool Company, New York, N. Y., a Corporation of New Jersey. Filed Jan. 28, 1927. Serial No. 164,148. 5 Claims. (Cl. 251-119.)

1,706,213—APPARATUS FOR DISPENSING LIQUIDS. Henry G. Cordley, New York, N. Y. Filed Feb. 28, 1928. Serial No. 257,592. 19 Claims. (Cl. 225-40.)

Issued March 26

1,706,436—CONTAINER. Seth L. Bright, Detroit, Mich., assignor to G. F. Lathrop and John J. Dodge, Detroit, Mich. Filed Aug. 20, 1927. Serial No. 214,395. 3 Claims. (Cl. 62-10.)

1,706,580—AERATING SYSTEM FOR ICE CANS. Joseph A. Martocello, Philadelphia, Pa. Filed Feb. 15, 1927. Serial No. 168,266. 7 Claims. (Cl. 62-159.)

1,706,589—FREEZING APPARATUS. Leroy S. Pfouts, deceased, Canton, Ohio, by John S. Pfouts, administratrix, Canton, Ohio, assignor to The H. H. Miller Industries Company, Canton, Ohio, a Corporation of Ohio. Filed Jan. 21, 1928. Serial No. 248,543. 10 Claims. (Cl. 61-114.)

1,706,594—METHOD OF STERILIZING AIR. Joseph F. Schiller and Walter W. Westcott, Philadelphia, Pa., assignors of two-thirds to said Joseph F. Schiller and one-third to said Walter W. Westcott. Filed May 14, 1924. Serial No. 713,165. 2 Claims. (Cl. 62-176.)

1,706,621—METHOD OF AND APPARATUS FOR REFRIGERATION. Alexander S. Limpert, Bay Shore, N. Y. Filed Nov. 26, 1926. Serial No. 150,796. 5 Claims. (Cl. 62-95.)

1. A sectional cooling device for refrigerating machines, comprising a plurality of dissimilar cooling units each having at least one of its walls formed of cast metal and having a pipe of a higher melting point cast integral therewith, a tubular inlet and a tubular outlet member, the respective inlet and outlet members of different units between being adapted to engage respectively the outlet and inlet members of adjacent units, and vanes removably attached to said units.
2. A sectional cooling device for refrigerating machines, comprising a plurality of dissimilar cooling units each having at least one of its walls formed of cast metal and having a pipe of a higher melting point cast integral therewith, and tubular inlet and outlet members, the respective inlet and outlet members of different units between being adapted to engage respectively the outlet and inlet members of adjacent units.

1,706,852—ROOM-COOLING APPARATUS. Gustav A. Kramer, Concord, Calif., assignor, by mesne assignments, to Frigidaire Corporation, a Corporation of Delaware. Filed Feb. 7, 1918. Serial No. 215,804. Renewed July 18, 1927. 5 Claims. (Cl. 62-134.)

1. An apparatus for cooling rooms the parts of which are supported from a common base said apparatus and base being readily portable as a unit about a room, having in combination a mechanical cooling apparatus, a prime mover actuating the same, a fan, a frictional drive connection between said fan and prime mover, and a cooling coil open to the room, the coil being so arranged relatively to the fan that the air current induced by the fan and passing through the cooling coil is cooled thereby.

1,706,891—EVAPORATOR ELEMENT. Abraham J. Kusel, Baltimore, and George W. Gall, Ruxton, Md., assignors to Kulair Corporation, Baltimore, Md., a Corporation of Delaware. Filed Apr. 26, 1927. Serial No. 186,743. 8 Claims. (Cl. 62-95.)

1. An evaporator element for refrigerating machines, comprising a series of superimposed connected heat exchange units, an insulated casing for enclosing a certain number of said units, depending straps for suspending the remaining units below the casing, said straps embracing the evaporator element as a whole and providing a means for supporting said element within a refrigerator compartment.

1,707,032—VIBRATION ABSORBER. Alfred Morris Thomson, Newark, N. J., assignor to Joseph Mercadante, New York, N. Y. Filed Feb. 10, 1925. Serial No. 8,092. 4 Claims. (Cl. 248-16.)

1,707,071—REFRIGERANT TANK. Len A. Banta, Clearfield, Pa. Filed Aug. 15, 1927. Serial No. 213,137. 7 Claims. (Cl. 62-69.)

1. A refrigerant tank consisting of a main receptacle and an auxiliary receptacle at the bottom extending beyond the sides to catch

the condensation, and a bottom of insulating material for the tank and auxiliary receptacle.

1,707,203—COOLING-DEVICE STAND. Albert E. Thornley, Pawtucket, R. I., assignor to Narragansett Machine Company, Pawtucket, R. I. Filed No. 5, 1926. Serial No. 146,554. 9 Claims. (Cl. 62-116.)

1. A stand for cooling devices, including legs, a head including a pair of side bars having horizontal parts seating on the upper ends of the legs, said bars having vertical parts, vertical plates having ventilating openings and having flanged lower ends, means to attach an element to said flanged ends of the plates, the upper ends of the plates being flanged, the ends of the latter flanges having ears secured to and between the vertical parts of the side bars, the side strips secured to the legs and having interturned ends engaged with the vertical parts of the side bars.

Issued April 2

1,707,319—REFRIGERATING DEVICE. Johannes Valdemar Marten Risberg, Sodertelje, Sweden. Filed Mar. 22, 1924. Serial No. 701,131, and in Sweden Aug. 30, 1921. 6 Claims. (Cl. 230-162.)

1. A device for compressing gases comprising in combination, a water-motor-compressor, valve mechanism for connecting the water motor with the supply and the discharge for the pressure water, a pulsator having a shiftable member actuating the said valve mechanism, and means for increasing and decreasing the water pressure acting upon the said shiftable member automatically.

1,707,330—REFRIGERATOR CAR. Walter C. Stone, Webster Groves, Mo. Filed Apr. 4, 1927. Serial No. 180,744. 7 Claims. (Cl. 137-111.)

1,707,358—REFRIGERATOR-DOOR-OPERATING MECHANISM. James E. Lindeman, Chicago, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a Corporation of Delaware. Filed Feb. 15, 1926. Serial No. 88,195. 11 Claims. (Cl. 268-72.)

1,707,484—REFRIGERATOR. Harry E. Keener, Denver, Colo. Filed Sept. 6, 1927. Serial No. 217,802. 1 Claim. (Cl. 62-31.)

In a refrigerator having an ice-chamber, a freezing element in the chamber in spaced relation to the walls thereof, comprising a skeleton frame, including a hollow room-member, boxes in the frame, sliding trays in the boxes, and a door in a wall of the refrigerator, affording access to the boxes.

1,707,801—APPARATUS FOR SCORING ICE. Bruce L. Fain, Carrollton, Ill., and William D. Crowell, St. Louis, Mo. Filed July 1, 1927. Serial No. 202,891. 7 Claims. (Cl. 62-112.)

1,707,836—REFRIGERATING SHIPPING PACKAGE. Wilbur L. Wright, Fulton, N. Y., assignor to Oswego Falls Corporation, Fulton, N. Y., a Corporation of New York. Filed Jan. 13, 1926. Serial No. 81,005. 4 Claims. (Cl. 62-92.)

1,707,892—REFRIGERATION PLANT OF THE INTERMITTENT-ABSORPTION TYPE. Ivar Amundsen, Oslo, and Erik Stephansen, Slemdal, near Oslo, Norway; said Stephansen assignor to said Amundsen. Filed May 9, 1928. Serial No. 276,473, and in Norway, Feb. 27, 1928. 3 Claims. (Cl. 62-5.)

1. In a refrigerating apparatus of the type including an absorbing or absorbing vessel having a heating jacket, means for intermittently supplying cooling water to said absorbing vessel comprising a reservoir, a siphon leading from said reservoir to a discharge point in operative relation to said absorbing vessel, a submerged bell in said reservoir having an open bottom, the inlet end of said siphon terminating within said bell, a little above the plane of the open end thereof, a gaseous fluid container arranged in the outlet of said heating jacket, said container being in communication with said bell.

Issued April 9

1,708,085—ICE-MAKING APPARATUS. Augustus P. Dougherty, Warren, Ohio, assignor to Ohio Galvanizing & Manufacturing Company, Niles, Ohio, a Corporation of Ohio. Filed Nov. 5, 1923. Serial No. 672,724. Renewed Apr. 23, 1928. 4 Claims. (Cl. 62-157.)

1,708,184—DRINKING-WATER COOLING AND DISPENSING APPARATUS. Benjamin Markus, Minneapolis, Minn., assignor to Henry F. Watson, Minneapolis, Minn. Filed Nov. 4, 1926. Serial No. 146,210. 7 Claims. (Cl. 62-116.)

1. A drinking water dispensing apparatus of the inverted bottle type comprising a water dispensing receptacle having an outer wall and an inner wall spaced from the outer wall at the upper portion and joined to the outer wall above the bottom of the outer wall to form an evaporator chamber, said a spigot through the outer wall below the line of juncture between the inner and outer walls.

1,708,390—REFRIGERATING APPARATUS. William E. Leibing, Oakland, Calif., assignor to Magnus Fruit Products Co., San Francisco, Calif., a Corporation of California. Filed Feb. 20, 1928. Serial No. 255,562. 8 Claims. (Cl. 62-141.)

1. An expansion unit for refrigerating apparatus, comprising a pair of tubular members, the inner member closed at its ends forming a refrigerating chamber, said members arranged with their walls concentrically disposed with portions of adjacent faces directly contacting, one of said walls being helically corrugated to afford a fluid channel surrounding the chamber, fluid inlet and outlet connections for said chamber, means for admitting a refrigerant into said chamber and for releasing its gases therefrom, and means for uniting the walls near their ends.

1,708,461—REFRIGERATOR. Walter Light Bodman, New York, N. Y., assignor to The Insulation Corporation, a Corporation of Delaware. Filed Mar. 25, 1926. Serial No. 97,392. 2 Claims. (Cl. 20-4.)

1. A refrigerator having a wall of spaced plates or panels with the surfaces covered with metal foil rolled into intimate contact with said surfaces and with the space between the walls filled solely by transverse cells.

1,708,600—COOLER. Jacob Henry Beckman, Oakland, Calif. Filed Sept. 7, 1926. Serial No. 133,942. 5 Claims. (Cl. 62-90.)

1. A cooler, comprising a casing, a box removably disposed within said casing, means for passing a thin film of water between said box and said casing, means for forcing air thru the film of water whereby all the air comes into contact with the water for causing the evaporation thereof, and means for causing operative connection with each other when said box, said water passing means, and said air forcing means are disposed in the casing, and causing operative disconnection when these members are removed from the casing.

1,708,605—REFRIGERATOR. Harry S. Cleveland, Minneapolis, Minn. Filed June 13, 1927. Serial No. 198,340. 3 Claims. (Cl. 62-51.)

1. A refrigerator having ice and food compartments connected by air-circulating passages, a cold air discharge passage located in the bot-

EXTRA DRY ESOTOO

THE PUREST
SULPHUR DIOXIDE

Analysis Guaranteed

WE HAVE AN AGENT WITH OUR PRODUCT IN STOCK

NEAR YOU—WIRE US WHERE WE CAN SERVE YOU

VIRGINIA-SMELTING CO. West Norfolk Va.

P. A. EUSTIS, Sec.- 131 State St. BOSTON. - 2 Rector St. NEW YORK.

March 12-August 13 Inclusive

tom of said ice compartment, and a downwardly curved deflector applied to the bottom of said ice compartment and extended under said cold air discharge passage and across the full depth of the inside of the food compartment for deflecting the air toward one side of the underlying food compartment.

1,708,625—REFRIGERATION. Alan Varley Livingston, New Haven, Conn., assignor to The Safety Car Heating & Lighting Company, a Corporation of New Jersey. Filed Mar. 7, 1928. Serial No. 13,702. 27 Claims. (Cl. 62-115.)

1. In apparatus of the nature of that herein described, in combination, a compressor, a polyphase induction motor for driving said compressor, means forming a substantially fluid-tight casing having included therein said compressor and said motor, a condenser for receiving compressed fluid from said compressor, means for passing a cooling fluid in thermal contact with said condenser, means for driving said last mentioned means and for supplying said motor with energy comprising rotary means adapted to be operated from a two-wire source of current and having a polyphase output connected to said motor for driving the latter, a cooling device adapted to have expanded into it condensed fluid from said condenser, and means responsive to temperature of said cooling device for controlling the operation of said last-mentioned driving means.

1,708,626—REFRIGERATION. Alan Varley Livingston, New Haven, Conn., assignor to The Safety Car Heating & Lighting Company, a Corporation of New Jersey. Filed Mar. 7, 1928. Serial No. 13,703. 26 Claims. (Cl. 62-116.)

1. In apparatus of the nature of that herein described, in combination, a compressor, a polyphase induction motor for driving said compressor, means forming a substantially fluid-tight casing having included therein said compressor and said motor, a condenser for receiving compressed fluid from said compressor, means for passing a cooling fluid in thermal contact with said condenser, means for driving said last-mentioned means and for supplying said motor with energy comprising rotary means adapted to be operated from a single phase source of alternating current and having a polyphase output connected to said motor for driving the latter, a cooling device for receiving condensed fluid from said condenser, and means responsive to the temperature of said cooling device for controlling the operation of said last-mentioned driving means.

Issued April 16

1,708,998—CONTINUOUS-OPERATION ABSORPTION ICE MACHINE. William M. Baxter, Fort Wayne, Ind., assignor, by mesne assignments, to The Wayne Home Equipment Company, Fort Wayne, Ind., a Corporation of Maryland. Filed Mar. 31, 1926. Serial No. 98,755. 6 Claims. (Cl. 62-119.)

1. An absorption refrigerating apparatus having a generator, a condenser and an absorber, fluid connections to permit weak liquor to flow from said generator into said absorber and an apertured diaphragm therein, fluid connections to permit rich liquor to flow from said absorber into said generator, and means for maintaining the continuity of said flows by gravity because of the differential in liquid heads in said apparatus.

1,709,176—CONDENSER FOR REFRIGERATING MACHINES. Rollin M. Hyde, Detroit, Mich., assignor to McCord Radiator & Mfg. Co., Detroit, Mich., a Corporation of Maine. Filed Dec. 18, 1926. Serial No. 154,379. 2 Claims. (Cl. 257-39.)

1. A condenser for refrigerating machines, consisting of opposed converging headers having inlet and outlet openings, and a multiplicity of tubes on opposite sides of the headers and connected therewith for the circulation of a refrigerant therethrough, said tubes being curved and arranged in side by side relation and connected with the headers in a manner to form circles increasing in diameter from one end of the headers to the other.

1,709,454—DIRECT EXPANSION ICE-CREAM FREEZER. Ralph B. Bagby, Cedar Rapids, Iowa, assignor, by mesne assignments, to Cherry-Burrell Corporation, Wilmington, Del., a Corporation of Delaware. Filed Aug. 19, 1926. Serial No. 130,117. 3 Claims. (Cl. 62-114.)

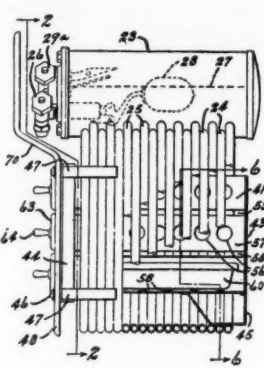
1. A refrigerator cover for ice cream cabinets adapted to close the opening directly above the ice cream cans including, a sealing flange, a depending portion adapted to receive a moisture absorbing substance, a perforated bottom portion to maintain the moisture absorbing substance within said cover, an upper portion having perforations therein, and a cap for closing the same.

1,709,515—SODA-FOUNTAIN AND ICE-CREAM SERVICE OR DISPENSING APPARATUS. William F. Beatty, Cincinnati, Ohio. Filed Oct. 20, 1924. Serial No. 744,626. 2 Claims. (Cl. 62-87.)

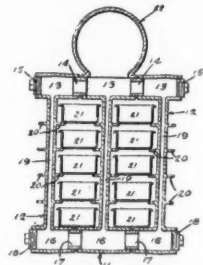
1. An ice-cream cabinet comprising in combination, a main single-chambered receptacle adapted to contain a mechanically refrigerated liquid-brine solution or pool of suitable depth therein, a revolvable base pan or tray pivotally mounted in the bottom of the said main pool receptacle, a plurality of upright suitably coupled hollow columns or pillars supported in the said revolvable base pan or tray and adapted to form closed bottom jacket inclosures for containing ice-cream freezer cans under horizontally-rotatable segregate control, and a cover-member provided on the said main pool receptacle and having one or more lid-controlled service access-openings therein.

1,709,516—ICE-CREAM MANUFACTURING AND DISPENSING APPARATUS. William F. Beatty, Cincinnati, Ohio. Filed Apr. 5, 1926. Serial No. 99,882. 2 Claims. (Cl. 62-114.)

1. An ice-cream making-and-service combination-cabinet comprising, in combination, a freezing-chamber having a suitable cover or top, a plurality of jacketed product-containers provided independent of each other in the said freezing-chamber and surrounded by a mechanically-refrigerated liquid solution or brine, removable cream-mixture working-means adapted for insertion in any selected one of said cans, lid-topped access-orifices to said cans provided in the said cover or top, and a swivel-power motor removably mounted on the middle of said cover or top and provided with an extensible driving-shaft that is adapted to be detachably coupled or connected at its outer end with gear propelling-mechanism on the said cream-mixture working-means, whereby the said selected one of the container-cans with said removable cream-mixture working-means may be applied in use for the operating-action of the said swivel-power motor in each initial making of the frozen product directly from the original supply-mixture while other cans in the said mechanically-refrigerated chamber are in already similarly worked ice-cream hardening and serving position in the same freezing chamber, substantially as shown and described.



1,710,009



1,711,252

1,709,588—REFRIGERATION. Alvar Lenning, Newburgh, N. Y., assignor to Electroflux Service Corporation, New York, N. Y., a Corporation of Delaware. Filed Sept. 13, 1927. Serial No. 219,193. 9 Claims. (Cl. 62-119.)

1. A rectifier for absorption refrigerating apparatus comprising a separating chamber, a source of cold and a self-contained closed circuit system in heat transfer relation with said separating chamber and said source containing a liquid and a non-condensable gas.

1,709,709—DEVICE FOR PRODUCING ICE CUBES. Robert T. Brizzolara, New Dorp, N. Y. Filed Sept. 9, 1927. Serial No. 218,414. 10 Claims. (Cl. 62-112.)

1,709,710—DEVICE FOR PRODUCING ICE CUBES. Robert T. Brizzolara, New Dorp, N. Y. Filed May 5, 1928. Serial No. 275,454. 6 Claims. (Cl. 62-111.)

1,709,730—CATCHMENT LOUVERS FOR COOL CHAMBERS, FOR PREVENTING THE PRECIPITATION OF MOISTURE ON THE PERISHABLE GOODS STORED THEREIN. John McLeish Maxwell, Dunedin, New Zealand. Filed Jan. 12, 1928. Serial No. 246,288. 2 Claims. (Cl. 62-103.)

1. In a cool chamber means for preventing the precipitation of moisture upon the goods stored therein, comprising a metal frame to fit in the chamber, a series of spaced parallel louvers secured therein, each of the said louvers having a longitudinal channel on each side of its lower edge, one channel receiving and conveying moisture or precipitation from the upper inclined surface of the louver, the other channel receiving and conveying moisture from the under surface of the louver, and a collecting trough on the metal frame in which the said channels discharge, substantially as set forth.

Issued April 23

1,727,875—SHARP FREEZING CONTAINER FOR MECHANICAL REFRIGERATORS. Lloyd G. Copeman, Flint, Mich., assignor to Copeman Laboratories Company, Flint, Mich., a Corporation of Michigan. Filed Jan. 4, 1929. Serial No. 330,359. Original No. 1,675,599, dated July 3, 1928. Serial No. 274,717, filed May 3, 1928. 7 Claims. (Cl. 62-111.) Division A.

1. As a new article of manufacture, a sharp freezing container of the type adapted to be positioned in heat conducting relation with the "low-side" of a mechanical refrigerating system, said container having partitions formed integrally with the side walls of the container for dividing the container into ice cube-forming chambers, the surfaces of said partitions and the side walls of said container being formed of a permanent material to which ice does not readily adhere and being transversely distortable to permit easy removal of the ice cubes.

1,727,876—SHARP FREEZING CONTAINER FOR MECHANICAL REFRIGERATORS. Lloyd G. Copeman, Flint, Mich., assignor to Copeman Laboratories Company, Flint, Mich., a Corporation of Michigan. Filed Jan. 4, 1929. Serial No. 330,360. Original No. 1,675,599, dated July 3, 1928. Serial No. 274,717, filed May 3, 1928. 8 Claims. (Cl. 62-111.) Division B.

1. A container for use with mechanical refrigerating units and adapted to receive water or the like to be frozen, comprising a rectangular formed at least in part of a flexible and elastic material, and reinforcing means for maintaining the container in operative shape without destroying the flexibility of some of the walls thereof.

1,709,863—COOLING APPARATUS. Arthur B. Modine, Racine, Wis. Filed Sept. 25, 1925. Serial No. 58,544. 7 Claims. (Cl. 123-174.)

1. Cooling apparatus of the kind described comprising a water jacket associated with the device to be cooled, a chamber positioned above the level of the liquid in said jacket and communicating with said jacket, said chamber being positioned directly above said water jacket, a condenser normally closed to the atmosphere and positioned above the level of the liquid in said chamber, said condenser lying in a plane slightly inclined to the horizontal and being adapted to receive vapors from said chamber, means for returning condensate from said condenser to the liquid in said cooling apparatus and means for preventing the filling of said apparatus with liquid above said chamber.

1,709,865—PROCESS OF FORMING REFRIGERATOR ELEMENTS. Glenn Muffly, Detroit, Mich., assignor to Copeland Products, Inc., a Corporation of Michigan. Filed July 1, 1927. Serial No. 202,789. 8 Claims. (Cl. 113-116.)

1. The method of forming chambers from sheet metal, comprising securing a pair of matching sheet metal members together along their edges, holding said members together in contacting relationship along their edges and at a plurality of spaced points between their edges, introducing fluid under pressure between said plates whereby to separate the same at all points except said edges and said spaced points, and thereafter securing said members together at said spaced points.

1,709,896—REFRIGERATION AND OTHER APPARATUS INCLUDING FLUID COMPRESSORS AND THE LIKE. Willis H. Carrier, Essex Fells, N. J., assignor to Carrier Engineering Corporation, Newark, N. J. Filed Oct. 13, 1924. Serial No. 743,275. 17 Claims. (Cl. 230-204.)

1,709,944—THERMOSTAT. Hubert R. Loranger, Hillsdale, Mich., and Dallas D. Parshall, Watervliet, N. Y., said Loranger assignor to Automatic Freezer Corporation, Detroit, Mich., a Corporation of Michigan. Filed June 2, 1924. Serial No. 717,345. 10 Claims. (Cl. 200-140.)

1,709,978—WATER COLLER. James Telford Hamilton, Berkeley, Calif. Filed Mar. 2, 1927. Serial No. 171,982. 5 Claims. (Cl. 62-141.)

1. In combination, a cooler box, a refrigerating machine in the box having refrigerating coils therein; a water cooler disposed on the outside of said box, said water cooler comprising an insulated chamber, a water receiving compartment inside of said chamber, a cooling compartment disposed inside of said water receiving compartment; an endless pipe containing a non-freezing cooling fluid extending thru said cooling compartment and being attached to the outside of said refrigerating coils.

1,709,980—WATER COOLER AND CHEST. Annie Harrison, Marlow, Okla., assignor of one-half to Eunice McGregor, Marlow, Okla. Filed Jan. 26, 1927. Serial No. 163,808. 1 Claim. (Cl. 62-142.)

A refrigerating attachment for automobiles comprising, in combination with the automobile body, a chest mounted upon the body, a wall of insulating material within the chest defining a water compartment having an open top, a closure for the top of the water compartment providing access to said compartment, the chest being open at its top, a closure for the said open top of the chest for access to the closure for the water compartment, an ice compartment arranged within the water compartment and supported from the bottom thereof and spaced from the walls of the water compartment, the ice compartment having its upper end located near the upper end of the water compartment, a closure for the upper end of the ice compartment, means within the ice compartment near the bottom thereof for supporting ice within the compartment, a water outlet leading from the compartment near the bottom thereof and through the wall of the body of the automobile upon which the attachment is mounted, a valve within the body of the automobile whereby the supply of water from the water compartment may be controlled, and a valve drain pipe leading from the ice compartment near the lower end thereof and beneath the ice supporting means therein and extending across the bottom portion of the water compartment and through the wall of the chest to the exterior thereof.

1,710,009—REFRIGERATING APPARATUS. Frank W. Andrews, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corporation, a Corporation of Delaware. Filed Apr. 28, 1927. Serial No. 187,349. 10 Claims. (Cl. 62-95.)

1. A cooling unit for refrigerating apparatus comprising refrigerant conduits defining a receiving space, and a compartment within the space having openings to permit the circulation of air thru the compartment.

1,710,131—REFRIGERATOR COUNTER. John J. Willenborg, Pawnee, Ill. Filed Feb. 1, 1927. Serial No. 165,147. 2 Claims. (Cl. 62-37.)

1. A refrigerator counter having a chamber therein, shelves within said chamber, an ice receptacle within the chamber and spaced from the upper wall thereof, a drain pan in the rear of said receptacle and extending under the receptacle in spaced relation thereto, a drain trough carried by said deflecting member, a drain pan in the bottom of the chamber, a drain pipe leading from the drain trough to the drain pan, a vertically disposed perforated tube extending through one of the shelves and resting on the other shelf, said drain pipe extending downwardly through said tube.

1,710,300—REFRIGERATING SYSTEM. William Dunkerley, North Melbourne, Victoria, Australia. Filed Apr. 13, 1927. Serial No. 183,540, and in Australia Feb. 24, 1927. 4 Claims. (Cl. 62-115.)

1. A refrigerating system comprising means for taking up refrigerant vapor and putting it under higher pressure, a condenser connected with said means, a high pressure conduit leading from said condenser, a return low pressure conduit leading back to said means, a plurality of expansion coils connected in parallel with said conduits, and a valve-controlled auxiliary circuit including a compressor and an auxiliary suction pipe and an auxiliary discharge pipe connecting said compressor with the main return pipe which leads from the expansion coil or coils to the first mentioned means whereby the refrigerant vapor upon leaving said expansion coil may be caused to pass through said auxiliary pipe circuit before returning to said means.

1,710,333—ABSORPTION COOLER. Max Alex, Bloomington, Ill. Filed Apr. 9, 1928. Serial No. 268,592. 5 Claims. (Cl. 62-120.)

1. Refrigerating apparatus of the character described comprising a combined generation and absorption chamber, a refrigerating tank, means interiorly of said tank for conducting a cooling fluid therethrough whereby to cool the contents of said tank, said cooling means dividing said tank into two compartments and said means constituting a cooling chamber for fluid and having independent means for withdrawing said fluid periodically for use and passageways through said means whereby to establish communication between said compartments.

1,710,334—ABSORPTION REFRIGERATOR. Max Alex, Bloomington, Ill. Filed Apr. 9, 1928. Serial No. 268,593. 5 Claims. (Cl. 62-120.)

1. Refrigerating apparatus of the character described comprising a combined generation and absorption chamber, a refrigerating tank, means interiorly of said tank for conducting a cooling fluid therethrough whereby to cool the contents of said tank, said cooling means dividing said tank into two compartments, and passageways through said means whereby to establish communication between said compartments.

1,710,381—REFRIGERATING COUNTER. Emmet Flinn, Green Bay, Wis. Filed Feb. 28, 1927. Serial No. 171,611. 8 Claims. (Cl. 62-37.)

1. A refrigerating counter comprising a permanently positioned, depressed channeled portion for the direct reception of articles to be chilled, a second channeled member located below said first mentioned channeled member and forming therewith a liquid receiving compartment, and a refrigerating unit located within said compartment, whereby a quiet blanket of dense chilled air is formed in the depressed portion.

1,710,405—REFRIGERATING CABINET. Lloyd G. Copeman, Flint, Mich., assignor to Copeman Laboratories Company, Flint, Mich., a Corporation of Michigan. Filed Feb. 15, 1926. Serial No. 88,341. 7 Claims. (Cl. 62-95.)

1. In a refrigerating cabinet, the combination of a container in the form of a single chamber, means for abstracting heat from the lower portion of the chamber, and means for preventing the formation of ice and frost on the upper part of the container.

(Continued on Page 20)



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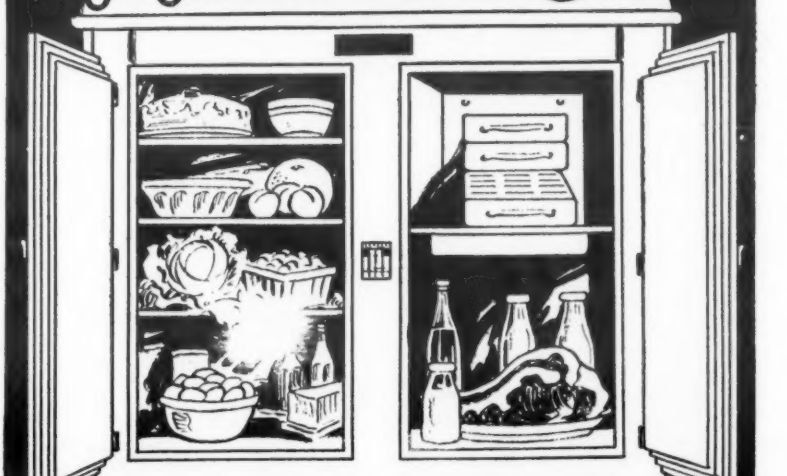
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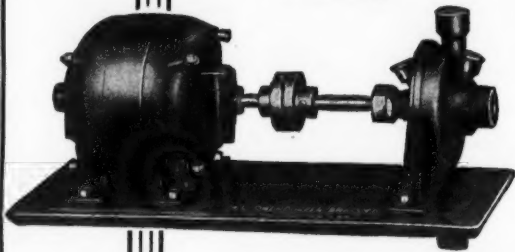
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REFRIGERATION PATENTS

(Continued from Page 19)

1,710,406—REFRIGERATING APPARATUS. Lloyd G. Copeman, Flint, Mich., assignor to Copeman Laboratories Company, Flint, Mich., a Corporation of Michigan. Filed June 16, 1926. Serial No. 116,322. 5 Claims. (Cl. 62-95.)
1. A refrigerating unit comprising a refrigerator shell shaped to form a food chamber, the side and bottom walls of said chamber being formed of artificial stone and the top wall being formed of artificial stone but shaped to provide a chamber for receiving an ice tray, or similar article and means for cooling the food chamber and ice chamber.

1,710,438—APPARATUS FOR REFRIGERATING BY ABSORPTION. Andrew J. Sweeney, Bayonne, N. J. Filed Aug. 24, 1926. Serial No. 131,175. 1 Claim. (Cl. 62-119.)
In an absorption refrigerating apparatus, the combination with a generator, a condenser, and an evaporator, of a receiver for collecting non-absorbable gases and a pump having connections adjacent the top and also adjacent the bottom of said receiver and to the generator side of the apparatus, whereby the ammonia and non-absorbable gases collected in the receiver may be removed from the low pressure side of the apparatus to the high pressure side thereof.

Issued April 30

1,710,830—DISPENSING REFRIGERATOR FOR BOTTLED BEVERAGES. John W. Lowder, Badin, N. C. Filed July 11, 1928. Serial No. 291,941. 1 Claim. (Cl. 312-116.)

1,710,910—ASPIRATOR INSTALLATION. Lyman F. Whitney, Boston, Mass., assignor, by mesne assignments, to Stator Refrigeration, Inc., a Corporation of Delaware. Filed Jan. 6, 1927. Serial No. 159,346. 7 Claims. (Cl. 230-95.)

1,710,933—METHOD FOR THE DETECTION OF METHYL CHLORIDE. George S. Lobdell, Potsdam, and Henry J. Kauth, Rome, N. Y. Filed May 28, 1927. Serial No. 194,954. Renewed Sept. 4, 1928. 5 Claims. (Cl. 23-230.)
1. A method for the detection of methyl chloride in refrigerating systems using a refrigerant, comprising the addition of methyl nitrite to the refrigerant and the detection of the methyl nitrite through the use of one of its characteristic reactions consisting of the reaction with alpha-naphthylamine acetate and sulfanilic acid.

1,710,990—OIL SEPARATOR. Oades J. Kenyon, Santa Barbara, Calif., assignor, by mesne assignments, to Instant Ice Corporation, a Corporation of Delaware. Filed July 25, 1927. Serial No. 208,377. 20 Claims. (Cl. 230-206.)

1,711,113—REFRIGERATOR. John Edward Gloekler, Pittsburgh, Pa. Filed May 11, 1926. Serial No. 108,267. 1 Claim. (Cl. 62-51.)
In a refrigerator, a one-piece refrigerator partition of substantial U-shape to provide vertical and horizontal legs, said partition having at each side a flange member projecting entirely across the side edge of the partition to extend from both sides of said partition, said flanges being adapted to engage the refrigerator walls and support the partition, the projecting flange of each vertical portion on the back thereof being provided with a series of perforations for the insertion of the ends of tray bars.

1,711,214—ICE CAN. William Prentice Willetts, Roslyn, N. Y. Filed Dec. 5, 1925. Serial No. 73,495. 3 Claims. (Cl. 62-159.)

1,711,252—MECHANICAL REFRIGERATION. Charles C. Spreen, Detroit, Mich., assignor to Kelvinator Corporation, Detroit, Mich., a Corporation of Michigan. Filed July 27, 1926. Serial No. 125,186. 4 Claims. (Cl. 62-95.)
1. In a mechanical refrigerating apparatus of the compressor-condenser-flooded-expander type, an expansion unit comprising a plurality of sections connected with their interiors in operative communication, a chamber for the reception of control valve means integral with one of said sections with its interior in operative communication with the interior of said section, and control valve means operatively positioned within said chamber.

1,711,253—VALVED COMPRESSOR PISTON. Charles C. Spreen, Detroit, Mich., assignor to Kelvinator Corporation, Detroit, Mich., a Corporation of Michigan. Filed Dec. 30, 1926. Serial No. 157,943. 3 Claims. (Cl. 230-221.)
1. A valve structure, for a piston having a recessed head and a plurality of ports through the end wall forming the bottom of the recess, comprising a valve retainer entirely within the recess in the head of said piston comprising a cup shaped central portion having finger extensions projecting therefrom in spaced relation and overlying each of the ports in said piston end wall, and a disc valve reciprocally mounted intermediate said retainer fingers and said piston end wall, the cup-shaped portion of said retainer extending through said disc valve and being secured to said piston head.

1,711,254—REFRIGERATION. Charles C. Spreen, Detroit, Mich., assignor to Kelvinator Corporation, Detroit, Mich., a Corporation of Michigan. Filed Jan. 10, 1927. Serial No. 160,296. 1 Claim. (Cl. 230-135.)

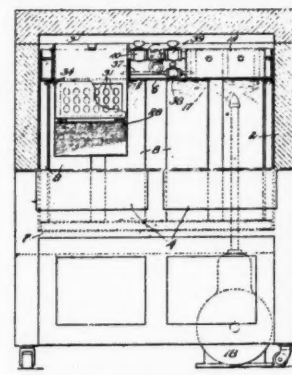
A unitary fan and belt pulley structure comprising a hub, a disc secured to said hub, said disc having a peripheral offset portion provided with slots and terminating in a peripheral flange extending in plan substantially parallel to the plane of the main portion thereof, said disc having slits therein defining portions adapted to be bent outwardly to form substantially triangular fan blades, and a flanged annular member provided with lugs adapted to extend through the slots in the offset portion of said disc and be clamped thereto, the flanges of said disc and annular members being associated to form a belt groove.

1,711,270—REFRIGERATING SYSTEM. Thomas J. Little, Jr., Detroit, Mich., assignor to Copeland Products, Inc., Detroit, Mich., a Corporation of Michigan. Filed Sept. 28, 1926. Serial No. 138,814. 7 Claims. (Cl. 62-127.)
1. In a mechanical refrigerating system, a pressure reducing device comprising a tube having a series of spaced indentations therein materially restricting the cross sectional area of said tube at spaced points, thereby forming a series of connected chambers therein having restricted inlet and outlet passages.

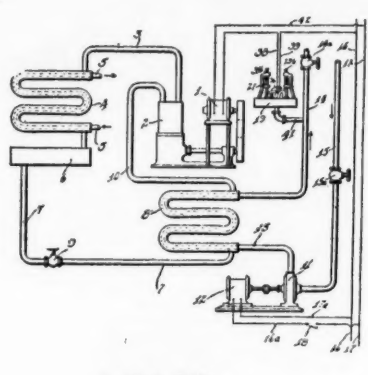
Issued May 7

1,728—REFRIGERATING APPARATUS. Robert Cramer, Milwaukee, Wis., assignor by mesne assignments, to Frigidaire Corporation of Delaware. Filed February 11, 1929. Serial No. 339,254. Original No. 1,642,015, dated Sept. 13, 1927. Serial No. 474,969, filed June 4, 1921. 18 Claims. (Cl. 62-8.)
1. Refrigerating apparatus of the class described, comprising an evaporator normally containing therein a quantity of liquid refrigerant and having inlet and outlet connections for the refrigerant, and thermostatic means responding to a fall in level of said liquid refrigerant and cooperating with one of said connections for maintaining the level of the refrigerant in the evaporator within predetermined limits.

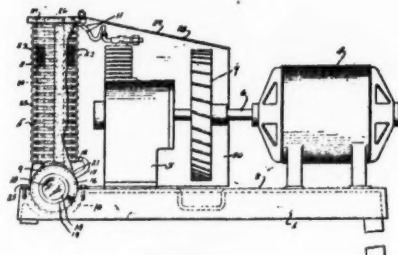
1,711,494—WATER AND BEVERAGE COOLER. Otto E. Giese, New York, N. Y. Filed May



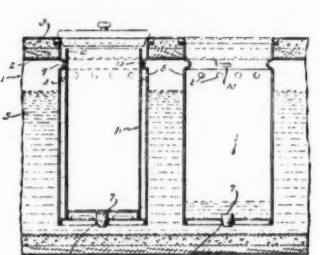
1,714,170



1,712,567



1,713,109



1,711,722

17, 1928. Serial No. 278,500. 2 Claims. (Cl. 62-143.)

1. An apparatus for cooling and dispensing liquids comprising a refrigerating chamber, a cover therefor having an opening therein, a cooling vessel positioned in said chamber and having its top portion extending through and above said opening, said top portion having an annular shoulder on the interior spaced from the top thereof, an adapter fitted within said top portion, said adapter being composed of resilient material and having an outwardly extending annular lip of greater external diameter than the internal diameter of said shoulder, said lip being adapted to be compressed by said shoulder when the adapter is fitted within said vessel and to expand upon passing said shoulder to engage the under side thereof, and a beverage bottle having a neck section positioned within said adapter, whereby said bottle is supported by said cooling vessel.

1,711,553—REFRIGERATION. Baltzar Carl von Platen, Carl George Munters, and Sigurd Mattias Backstrom, Stockholm, Sweden, assignors to Electrolux-Servel Corporation, New York, N. Y., a Corporation of Delaware. Filed June 3, 1927. Serial No. 196,179, and in Sweden June 9, 1926. 11 Claims. (Cl. 62-178.)
8. That improvement in the art of refrigerating through the agency of a system employing an auxiliary agent in the presence of which the cooling agent evaporates which consists in successively diffusing portions of the cooling agent into the auxiliary agent in a plurality of substantially isolated spaces at different temperatures and varying the rate of diffusion in the spaces in accordance with variations in temperature of the auxiliary agent.

1,711,581—COOLING AND DISPENSING CABINET. Thurman J. Bixler, Hutchinson, Kans. Filed Aug. 13, 1926. Serial No. 129,030. 1 Claim. (Cl. 312-36.)

A combined refrigerating and dispensing apparatus comprising a cabinet having a refrigerator containing chamber, and a series of U-shaped dispensing racks disposed in said chamber and independently insertible therein and withdrawable therefrom, each rack being of unitary formation and of non-circular form in cross-section and comprising in imperforate top, bottom and side walls, whereby the racks are closed against communication with the refrigerator containing chamber of the cabinet, each rack having a transverse partition dividing it into upper and lower bottle containing chambers, and said racks being arranged with their adjacent sides in spaced relation to each other or the flow of refrigerant between them.

1,711,691—REFRIGERATED DISPLAY COUNTER. William A. Richter, Milwaukee, Wis. Filed Nov. 15, 1926. Serial No. 148,472. 1 Claim. (Cl. 62-37.)

In a refrigerated show case having a steep forwardly inclined base, a plurality of spaced angular racks mounted on said base, each rack having a rear vertical portion and a forwardly inclined lower portion spaced from each other at an angle substantially greater than a right angle, there being notches formed in both portions of each rack, lower and rear cooling coils entering the notches of said racks and supported thereby, and an angular tray mounted on said racks, said tray having lower and rear portions disposed at an angle with respect to each other corresponding to the angularity of said rack portions.

1,711,702—CONDENSER ASSEMBLY. Charles C. Spreen, Detroit, Mich., assignor to Kelvinator Corporation, Detroit, Mich., a Corporation of Michigan. Filed Apr. 11, 1927. Serial No. 182,708. 6 Claims. (Cl. 257-39.)

1. In a refrigerating apparatus, a condenser provided with a plurality of relatively closely spaced fins, means for causing an air stream to engage said fins, and a screen for removing foreign particles from said air stream prior to its engagement with said fins.

1,711,721—METHOD AND APPARATUS FOR FORMING AND MAINTAINING SANITATION IN ICE CREAM CABINETS. Lloyd G. Copeman, Flint, Mich., assignor to Copeman Laboratories Company, Flint, Mich., a Corporation of Michigan. Filed Feb. 8, 1927. Serial No. 166,906. 9 Claims. (Cl. 62-75.)

1. The method of insuring and maintaining sanitation in ice cream cabinets and similar units of the type having a permanent outside container in heat conducting relation with the cooling medium, and a removable inside container for carrying the substance to be cooled, which comprises sealing the outside surface of the inner container from the inside surface of the outside container.

1,711,722—STORAGE COMPARTMENTS FOR ICE-CREAM CABINETS OR THE LIKE. Lloyd G. Copeman, Flint, Mich., assignor to Copeman Laboratories Company, Flint, Mich., a Corporation of Michigan. Filed Feb. 12, 1927. Serial No. 167,615. 11 Claims. (Cl. 62-75.)

1. Ice cream cabinets, or similar structures of the type having a brine tank and a compartment containing rigidly secured to the tank and extending within and surrounded by the brine, comprising in combination with said container of a readily removable imperforate container, for receiving the ice cream cans and the like, positionable within said fixed container, and a non-freezing solution filling the space between said fixed container and removable container.

1,711,804—REFRIGERATION. Carl Georg Munters, Stockholm, Sweden, assignor to Electrolux Servel Corporation, New York, N. Y., a Corporation of Delaware. Filed Dec. 8, 1926. Serial No. 153,262. 8 Claims. (Cl. 62-120.)
3. Refrigerating apparatus comprising in combination, a generator, an insulated distributor connected thereto and two boilers extending through the insulation around the distributor, one having its vapor space in the distributor,

and the other having its liquid space in the distributor.

1,711,810—REFRIGERATOR. Fay T. Rodgers, Memphis, Tenn. Filed Aug. 2, 1926. Serial No. 126,436. 3 Claims. (Cl. 62-37.)

1. A refrigerator, comprising a casing provided along its median longitudinal dimension with openings through the top of said casing, a cover for each of said openings, and a refrigerant container extending longitudinally of said casing, said container being V shaped in cross section, with the upper edges of the legs of said V bent outward and downward forming inverted J shaped edges, J shaped hangers secured to the under side of the top of said casing, on each side of said openings, whereby the sides of said container may be detachably engaged with said hangers, and will depend downwardly therefrom and toward the center of said casing and present a minimum obstruction to viewing the contents of said casing.

1,711,840—REFRIGERATING CONTAINER. Earl S. Graham and Earl S. Graham, Jr., Dallas, Tex. Filed Apr. 29, 1927. Serial No. 187,634. 2 Claims. (Cl. 62-75.)

1. In a refrigerating container, a tank, and a vertical storage container spaced from the walls of the tank and open at its opposite ends with its lower end secured to the bottom of the tank, the wall of said container being formed with a continuous series of radially directed fins and presenting a substantially plane surface at the space next the tank.

1,711,921—COMBINED REFRIGERATOR AND DISPLAY STAND. Norton Henry Connell and Mion McMahan, Jacksonville, Fla. Filed Dec. 31, 1926. Serial No. 158,291. 2 Claims. (Cl. 62-37.)

1. A device of the character described comprising a display stand formed of an open framework, a cooling chamber mounted on the display stand, tracks located transversely of the framework, wire baskets slidably mounted on the tracks with pairs of the baskets being aligned and having their inner ends spaced apart to provide an air space, said wire baskets being located below the cooling chamber and open to the atmosphere, the side walls of the adjacent baskets being spaced apart to provide transverse air passages, the spacing of the baskets from each other and from the bottom of the cooling chamber providing air channels for the circulation of atmospheric air through and between the baskets, the air being cooled in the neighborhood of the bottom of the cooling chamber.

1,712,085—REFRIGERATING APPARATUS. Thomas J. Little, Jr., Detroit, Mich., assignor to Copeland Products, Inc., Detroit, Mich., a Corporation of Michigan. Filed May 8, 1926. Serial No. 107,568. 2 Claims. (Cl. 62-95.)

1. In a mechanical refrigerating system, a refrigerant expander unit including two sheet metal plates joined at their peripheral edges and bent to form a container of substantially U-shape, the bottom of said container adapted to serve as a shelf for trays, the sides of said container extending upwardly from the bottom thereof and the free ends of said sides being bent inwardly towards each other to form an inlet for one of said bent ends, and an outlet for the other of said bent ends.

Issued May 14

1,712,567—REFRIGERATING SYSTEM. Richard W. Kritzer, Chicago, Ill., assignor to Peerless Ice Cream Machine Company, Chicago, Ill. Filed Dec. 10, 1926. Serial No. 154,004. 4 Claims. (Cl. 62-4.)

1. A refrigerating system, comprising means for circulating a refrigerant fluid, means for circulating a liquid medium cooled by said refrigerant fluid, and means actuated by an abnormal change of pressure in the circulated liquid medium for stopping the circulation of the refrigerant fluid.

1,712,568—REFRIGERATING SYSTEM. Richard W. Kritzer, Chicago, Ill., assignor to Peerless Ice Cream Machine Company, Chicago, Ill. Filed Dec. 10, 1926. Serial No. 154,005. 7 Claims. (Cl. 62-4.)

1. In a refrigerating system using a liquid medium, means for cooling the medium, means for circulating the cooled medium, means for starting and stopping the circulation of the cooled medium, responsive to its temperature, and means controlled by the rate of flow of the circulated medium for stopping the cooling thereof.

1,712,653—TEMPERATURE INDICATING DEVICE. Otto L. Egloff, New York, N. Y. Filed Apr. 16, 1923. Serial No. 632,217. 21 Claims. (Cl. 73-52.)

1. The combination with a fluid cooling system of a vehicle propelling internal combustion engine and temperature responsive means associated with said system, of means associated with said responsive means, for indicating the temperature of the cooling fluid, and compensating means for maintaining said indicating means at substantially the temperature of said fluid.

1,712,701—DEVICE FOR COOLING LIQUIDS. Louis W. Hassensall, Aiken, S. C. Filed Apr. 20, 1928. Serial No. 271,625. 11 Claims. (Cl. 62-92.)

1. A cooling device to be disposed within a liquid container comprising a receptacle adapted to contain frozen gas, a cover for said receptacle, a tubular neck extending outwardly from said cover, and a pipe leading from said neck and constituting a discharge tube for gas passing from the receptacle.

1,712,710—VENTILATING SYSTEM FOR REFRIGERATOR CARS. Charles A. Moore, Edina, Minn. Filed Mar. 22, 1927. Serial No. 177,317. 12 Claims. (Cl. 62-21.)

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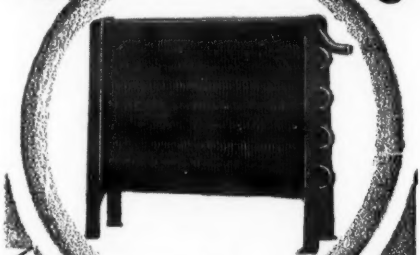


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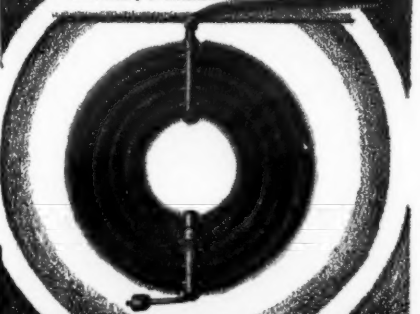
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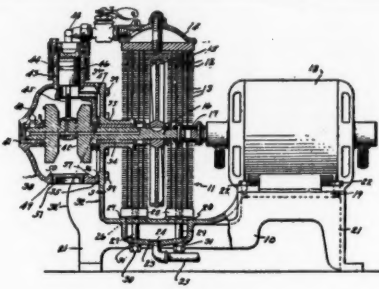


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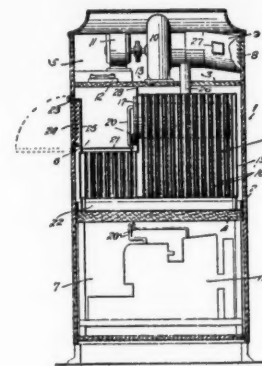
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1,715,368



1,716,766

1,712,713—REFRIGERATOR. Amos V. Pankey, Harrisonburg, Va. Filed Dec. 29, 1927. Serial No. 243,255. 2 Claims. (Cl. 62-31.)
1. A refrigerator having therein a drip conduit, and metering means within the drip conduit for measuring the amount of drip water flowing therethrough.

1,712,896 — REFRIGERATOR SHOW CASE. George F. Moorehead, Des Moines, Iowa. Filed Oct. 4, 1926. Serial No. 139,352. 2 Claims. (Cl. 62-37.)

1. In a refrigerator show case, a lower storage compartment, a display compartment above said storage compartment, an intermediate compartment between the storage and the display compartments and a refrigerant compartment above said storage compartment and back of said display and said intermediate compartments whereby a circulation of air is maintained forward through said storage and said intermediate compartments, backward through said display compartment and downward through said refrigerant compartment.

1,713,109—CONDENSER. Thomas C. Whitehead and Fred J. Heideman, Detroit, Mich.; said Heideman assignor to said Whitehead. Filed Feb. 1, 1926. Serial No. 85,290. 7 Claims. (Cl. 257-39.)

1. In a refrigerating apparatus, the combination with a stand, of a condenser having a tubular base secured thereto, a plurality of coils of tubing arranged in superposed relation, and means for holding the coils in position including a frame secured to the base.

1,713,348 — FOOD-PRESERVING CONTAINER. David J. O'Brien, Manhattan Beach, N. Y., assignor to Thermopack Company, Inc., New York, N. Y., a Corporation of New York. Filed Dec. 16, 1925. Serial No. 75,814. 14 Claims. (Cl. 62-92.)

1,713,395—WATER COOLER. Morris Raymond, Brooklyn, N. Y. Filed Jan. 9, 1928. Serial No. 245,483. 3 Claims. (Cl. 62-42.)

1. A water cooler including casing having a removable cover, an outlet pipe leading therefrom, a trough provided in said cover adjacent the side edges thereof, an ice water compartment beneath said casing, a drain pipe for carrying off water from said trough to said ice water compartment, and an overflow pipe leading from said ice water compartment for draining excess water therefrom.

Issued May 21

1,713,596—ARTIFICIAL ICE. Max Eule, Bremen, Germany, assignor to Adolf Hartmann, Bremen, Germany. Filed Sept. 1, 1927. Serial No. 217,003, and in Germany Sept. 28, 1926. 11 Claims. (Cl. 62-172.)

1,713,620—REFRIGERATOR DISPLAY CASE. Henry E. Pauk, St. Louis, Mo. Filed Jan. 25, 1928. Serial No. 249,271. 4 Claims. (Cl. 62-37.)

1. A refrigerator display case, comprising a transparent show case, a cooling cabinet located within said case, a tray mounted on the top of said cabinet for the support of the refrigerant, and a plurality of trays located in the cabinet beneath the refrigerant tray for the supporting and preserving of biological products.

1,713,639 — REFRIGERATING APPARATUS. Eugene L. Barnes, Buffalo, N. Y., assignor to The Barber Asphalt Company, Philadelphia, Pa., a Corporation of West Virginia. Filed May 4, 1927. Serial No. 188,689. 10 Claims. (Cl. 62-115.)

1. A refrigerant regenerator comprising a motor driven compressor, a superjacent header receiving refrigerant therefrom, a discharge header behind said compressor, condenser tubes extending rearward and then downward from the first header to the second, and a liquid refrigerant reservoir behind said second header detachably connected thereto.

1,713,776—REFRIGERATING AND AIR-CIRCULATING MEANS FOR STORAGE ROOMS. Charles A. Moore, Edina, Minn. Filed Aug. 4, 1925. Serial No. 48,049. 5 Claims. (Cl. 62-95.)

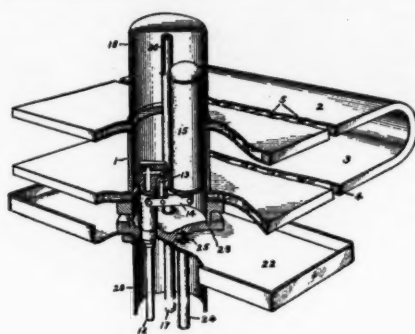
1,713,888 — METHOD OF REFRIGERATION. Samuel C. Carney, Tulsa, Okla., assignor to Shell Petroleum Corporation, a Corporation of Virginia. Filed Oct. 28, 1925. Serial No. 65,346. 6 Claims. (Cl. 62-172.)

1. A method of freezing liquids, which includes supplying a mixture of liquid hydrocarbon to an excess of liquid to be frozen in a chamber, maintaining a partial vacuum in said chamber, evaporating a part of the hydrocarbon liquid, withdrawing the unevaporated liquid refrigerant from the chamber, and drawing the frozen bodies of the liquid from the excess of liquid in the chamber.

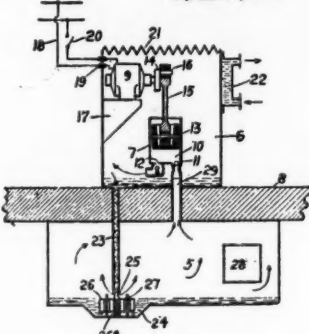
1,713,932—REFRIGERATOR-DOOR-OPERATING MECHANISM. Sven J. Strid, Chicago, Ill., assignor, by mesne assignments, to W. H. Miner, Inc., a Corporation of Delaware. Filed Dec. 24, 1923. Serial No. 662,509. 10 Claims. (Cl. 268-72.)

1,713,934 — REFRIGERATING APPARATUS. Burchard Thoenes, New York, N. Y., assignor of one-half to Burchard M. Thoenes, New York, N. Y. Filed Oct. 9, 1925. Serial No. 61,553. 11 Claims. (Cl. 62-119.)

1. A refrigerating apparatus including in combination, a vacuum tank in which a refrigerant is evaporated from solution, an absorption tank, means for withdrawing refrigerant vapor from the vacuum tank and introducing it into the absorption tank, a conduit for conducting liquid refrigerant solution from the ab-



1,717,208



1,715,709

sorption tank to the vacuum tank, and means for automatically maintaining the flow of liquid through said conduit constant in spite of changes in the pressure difference existing in said tanks.

1,714,176—REFRIGERATOR. James MacKaye, Hanover, N. H., assignor to Stone & Webster, Inc., Boston, Mass., a Corporation of Massachusetts. Filed Nov. 12, 1926. Serial No. 147,919. 9 Claims. (Cl. 62-152.)

1. A refrigerator of the domestic type comprising, in combination, a casing having a food chamber therein, a water jacket for cooling said chamber, a cooling unit in contact with the water in said jacket and around which said water circulates, said unit comprising a container for holding a body of water, means for automatically maintaining a substantially constant level of water in said jacket, a vacuum pump connected with said container and operative to maintain a relatively high vacuum therein, connections for admitting water from said jacket to said container, and a float-operated valve controlling the flow of water through said connections in response to changes of water level in said container.

1,714,228 — TEMPERATURE CONTROL FOR LIQUID CONTAINERS. Warren K. Lewis, Newton, Mass., assignor to Standard Oil Development Company, a Corporation of Delaware. Filed Sept. 19, 1924. Serial No. 738,656. 7 Claims. (Cl. 62-173.)

1. A container having a heat insulated wall and adapted to hold a body of liquid at a temperature below its boiling point, means for cooling the body of the liquid, means for preventing substantial increase or decrease in the temperature of the liquid, said means comprising a conduit traversing said wall and in temperature controlling relation thereto, and a stream of fluid passing through said conduit and adapted to control the heat exchange between the liquid and the exterior of the container, without imparting any substantial amount of heat to the liquid, whereby thermal circulation currents in the liquid are minimized.

1,714,235—MILK COOLER. Orton A. Peck, Keene, N. H. Filed Sept. 7, 1928. Serial No. 304,604. 5 Claims. (Cl. 62-91.)

Issued May 28

1,714,756—AUTOMATIC VALVE. Eugene L. Barnes, Buffalo, N. Y., assignor to The Barber Asphalt Company, Philadelphia, Pa., a Corporation of West Virginia. Filed July 24, 1926. Serial No. 124,617. 2 Claims. (Cl. 62-3.)

1. A liquid and vapor chamber for a circulatory refrigerating system having a lateral opening, in combination with a detachable closure for said opening, a trap chamber carried by said closure with a detachable portion including means for the passage of liquid from the trap chamber out into the liquid and vapor chamber, and an overflow and float pot in said trap chamber controlling said passage means and removable with the detachable portion of the trap chamber.

Issued June 4

1,715,361—REFRIGERATING APPARATUS. Fred J. Heideman, Detroit, Mich., assignor of ninety per cent to Thomas C. Whitehead, River Rouge, Mich. Filed Sept. 21, 1925. Serial No. 57,791. 8 Claims. (Cl. 62-4.)

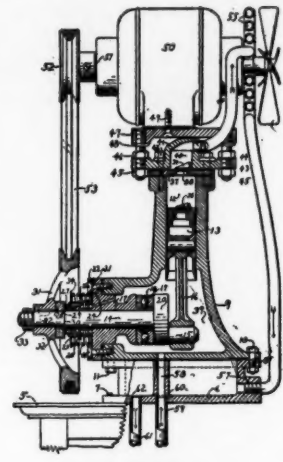
1. In a refrigerating apparatus, the combination with a brine tank and an expansion coil, of a sensitizer mounted on the top of said tank and arranged adjacent the discharge end of the expansion coil, a pressure responsive device connected to said sensitizer, and adjustable means within the sensitizer adjustable to selectively cause the pressure responsive device to be actuated either directly by the pressure in the expansion coil or indirectly by the temperature thereof.

1,715,386 — REFRIGERATING APPARATUS. Thomas F. Rainsford and Thomas C. Whitehead, Detroit, Mich., assignors to Thomas C. Whitehead, Detroit, Mich. Filed May 18, 1925. Serial No. 31,149. 2 Claims. (Cl. 62-115.)

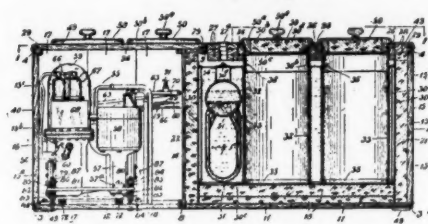
1. In a refrigerating apparatus including a radiator, a motor and a crank shaft, the combination therewith of a base formed with a support for said motor, a hollow portion constituting a header for said radiator and an upwardly extending projection, a casing secured to said projection, and bearings formed in said projection and casing for securing said crank shaft, said bearings being aligned with the shaft of said motor.

1,715,607—APPARATUS FOR AND METHOD OF REFRIGERATION. Charles A. Kohl, St. Louis, Mo., assignor to St. Louis Butchers' Supply Co., St. Louis, Mo., a Corporation of Missouri. Filed Feb. 22, 1926. Serial No. 89,825. 2 Claims. (Cl. 62-104.)

1. A device of the class described comprising a refrigerator, a partition located therein for dividing said refrigerator into an upper and a lower compartment, an air passage formed through said partition, a container adapted to contain a non-freezing solution located in the bottom of said lower compartment, a floor located above said container, a duct extending upward from said container and terminating in the upper compartment, said duct also having communication with the lower compartment above the floor, means for chilling said non-freezing solution, and means for circulating said chilled solution, said circulating means including means for spraying said solution downwardly through said duct whereby air in the refrigerator is circulated and chilled.



1,717,847



1,716,150

1,715,629—ROTARY COMPRESSOR. William E. Shore, West New Brighton, N. Y. Filed Jan. 10, 1927. Serial No. 160,194. 5 Claims. (Cl. 230-153.)

1,715,709—REFRIGERATING APPARATUS. Alexander Taylor Kasey, Tinticum Township, Delaware County, Pa., assignor to Westinghouse Electric and Manufacturing Company, a Corporation of Pennsylvania. Filed April 16, 1920. Serial No. 374,403. 16 Claims. (Cl. 62-116.)

1. In a refrigerating machine in which a refrigerant is successively and repeatedly vaporized, compressed and condensed, in combination, a condensing chamber, an expansion chamber communicating therewith, a compressor for withdrawing refrigerant from the expansion chamber and delivering it to the condensing chamber, and means for driving the compressor, said compressor and said driving means being enclosed within the condensing chamber.

1,715,753—AIR-COOLING DEVICE. Ruland Hardy, Orland, Calif. Filed April 10, 1926. Serial No. 101,214. 1 Claim. (Cl. 62-139.)

1,715,828—REFRIGERATING COIL SYSTEM. Norman H. Gay, Los Angeles, Calif. Filed May 18, 1927. Serial No. 192,242. 20 Claims. (Cl. 62-126.)

1. In a refrigerating system, an inlet header, an outlet header disposed substantially above said inlet header, a plurality of refrigerating coils connected to said headers, each of said coils being of relatively large internal section and being of U-shape so as to afford free flow for the gaseous and liquid refrigerant there-through between said headers, and means to separate gaseous and liquid refrigerant coming from the outlet header and to return the liquid refrigerant to the inlet header whereby a circulation of liquid refrigerant is established through said headers, coils and means by the difference in specific gravity between the liquid refrigerant in said means and the mixed gaseous and liquid refrigerant in said coils.

1,716,105—SELF-PRIMING PUMPING APPARATUS. William F. Brandt, Fort Wayne, Ind., assignor, by mesne assignments, to The Wayne Home Equipment Company, Fort Wayne, Ind., a Corporation of Maryland. Filed Jan. 7, 1928. Serial No. 245,122. 11 Claims. (Cl. 103-126.)

1,716,150—REFRIGERATED FOOD CABINET. John R. Replogle, Detroit, Mich., assignor, by mesne assignments, to Kelvinator Corporation, Detroit, Mich., a Corporation of Michigan. Filed Aug. 25, 1924. Serial No. 733,913. 7 Claims. (Cl. 62-116.)

1. In a refrigerated cabinet for food and the like, the combination of a rectangular frame and casing structure comprising bottom, side and top walls; a partition dividing the structure into two main compartments and comprising an upright wall section extending transversely of the longitudinal axis of the cabinet; a brine tank disposed in one of said compartments; a plurality of open-topped food chambers extending downward into the brine tank and having their upper ends opening through the top wall of the cabinet; closures for said food chambers; and means for cooling the brine in said tank comprising a gas liquefying means disposed in the other main compartment of the cabinet, a vaporizer having a horizontal elongated header and a plurality of depending pipe loops with their ends connected to the header, said vaporizer being disposed in the brine tank adjacent and substantially parallel to the said transverse partition wall, and the vaporizer header having one of its ends connected with a liquid-tight joint to the adjacent side wall of the brine tank at the periphery of an aperture through said wall, and conduits operatively connecting the gas liquefier and vaporizer, said conduits having communication with the vaporizer through the aforesaid end of the header independently of the said side wall of the brine tank.

Issued June 11

1,716,366—BAFFLE TRAY FOR REFRIGERATED DISPLAY COUNTERS. Jayson K. Bond, Milwaukee, Wis., assignor to Federal Asbestos & Cork Insulating Co., Milwaukee, Wis., a Corporation of Wisconsin. Filed Dec. 1, 1927. Serial No. 237,030. 5 Claims. (Cl. 62-37.)

1. A baffle tray for refrigerated display counters, comprising a platform portion, a comparatively short front baffle extending upwardly from the front edge of the platform portion, a rear baffle extending upwardly from the rear portion of the platform portion and of a considerably greater height than the front baffle, and spacing rails projecting from said rear baffle and the platform member and extending longitudinally of the latter.

1,716,522—BOTTLED-BEVERAGE-COOLING CABINET. Harry W. Hibbard, Lyndhurst, Ohio, assignor, by mesne assignments, to Hibbard Cabinets, Inc., Cleveland, Ohio, a Corporation of Delaware. Filed May 15, 1926. Serial No. 109,433. 14 Claims. (Cl. 62-95.)

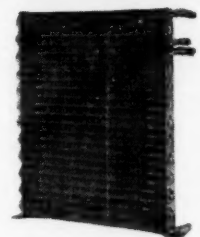
1. A refrigerating cabinet including a casing, a cooling tank within the casing, and partitions extending at intervals between the tank and walls of the casing to subdivide the casing into a plurality of compartments, a spaced pair of said partitions being provided between adjacent compartments to form air circulation spaces having means of inter-communication.

1,716,551—REFRIGERATING APPARATUS. Charles George Hayes, Plainville, Mass., assignor to Harry C. Folger, Waverly, Mass. Filed July 24, 1924. Serial No. 728,024. 5 Claims. (Cl. 62-1.)

1. A deformable refrigerating cartridge comprising a plurality of sealed rigid refrigerating (Continued on Page 22)

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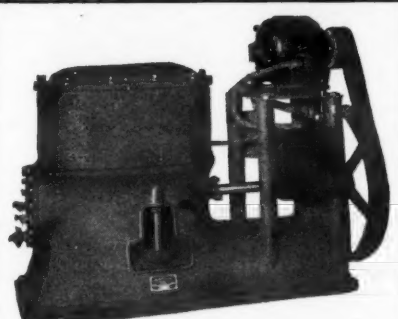


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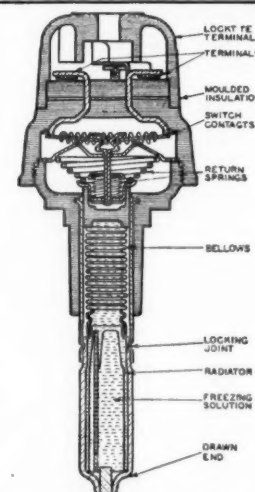
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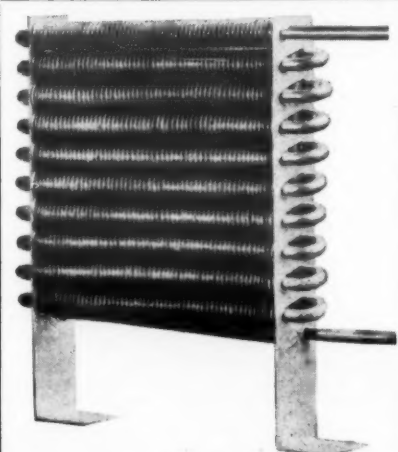
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REFRIGERATION PATENTS

(Continued from Page 21)

containers adapted to contain isolated bodies of refrigerant, and a plurality of individual means attached to and connecting said containers flexibly whereby to permit the configuration of the cartridge to be varied.

1,716,766—AIR COOLER AND REFRIGERATOR. Edmond R. Cook, Oakland, Calif. Filed Apr. 27, 1927. Serial No. 187,076. 3 Claims. (Cl. 62-129.)

1. In combination, a cabinet having an upper, an intermediate and a lower compartment, a cooling unit in said intermediate compartment having means to permit air to flow therethrough, an air circulating structure in said upper compartment designed to force air downwardly through said unit, cool air escape means opening from said intermediate compartment, and means in said lower compartment for supplying a refrigerant to said unit.

1,716,867—REFRIGERATOR CAR. Harold A. Simms, Chicago, Ill. Filed Sept. 15, 1923. Serial No. 662,863. 13 Claims. (Cl. 62-19.)

1,716,945—WATER-COOLING APPARATUS. Elmer Ellsworth Beede, Pipestone, Minn. Filed Dec. 14, 1927. Serial No. 239,982. 1 Claim. (Cl. 62-141.)

Water cooling apparatus comprising a suitably insulated container, a frost resisting liquid in the container, pipe coils immersed in the liquid, a refrigerating element immersed in the liquid above the pipe coils, a storage tank for water, a pipe connecting the upper end of the tank with the uppermost of the pipe coils, and a pipe connecting the lowermost of the pipe coils with the lower portion of the tank.

1,717,005—SYSTEM FOR COOLING MINES AND OTHER CHAMBERS REQUIRING VENTILATION. Willis H. Carrier, Essex Falls, N. J., assignor to Carrier Engineering Corporation, Newark, N. J. Filed Feb. 25, 1924. Serial No. 695,045, and in Great Britain July 2, 1923. 20 Claims. (Cl. 62-176.)

1,717,173—REFRIGERATING APPARATUS. Willem Age Slager, Rijswijk, Netherlands, assignor to Kodowa Refrigerator Co., Ltd., The Hague, Netherlands, a Corporation of the Netherlands. Filed Nov. 1, 1928. Serial No. 316,530, and in the Netherlands Aug. 4, 1927. 5 Claims. (Cl. 62-118.)

1. In a refrigerating apparatus, an evaporator, a storage tank for condensed refrigerant thermally isolated from said condenser, and a conduit connecting said tank with said evaporator, said conduit being extended upwardly into said tank an appreciable distance to prevent the passage of water through said conduit into said evaporator.

1,717,208—REFRIGERATOR EVAPORATOR. Charles L. Heiser, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed May 21, 1926. Serial No. 110,647. 10 Claims. (Cl. 62-95.)

8. In a mechanical refrigerating system, a U-shaped refrigerant expander unit including a container for refrigerant comprising sheet metal plates spaced apart and affording a chamber therebetween, to thus form said container, the legs of said U-shaped expander being spaced to receive an ice tray therebetween supported on the top surface of the lower leg of said expander when said legs extend horizontally one above the other.

Issued June 18

1,717,459—REFRIGERATOR. Ivar Lundgaard, Hartford, Conn., assignor, by mesne assignments, to Devon Manufacturing Company, Boston, Mass., a Corporation of Massachusetts. Filed May 23, 1922. Serial No. 562,906. 13 Claims. (Cl. 62-170.)

1. A mechanical domestic refrigerator comprising in combination, a refrigerating compartment, a closed cycle refrigerating machine using a gaseous mediating fluid having a cold cylinder and a hot cylinder, each of said cylinders being adapted to be surrounded by a circulating gaseous medium, thermo-siphonic means for circulating a body of air over said cold cylinder and through said refrigerating compartment to remove heat therefrom, and means for circulating a body of air over said hot cylinder to remove heat from the system.

1,717,584—METHOD AND APPARATUS FOR REFRIGERATION. Samuel Ruben, New York, N. Y. Filed April 7, 1926. Serial No. 100,208. 7 Claims. (Cl. 62-178.)

3. The method of cooling bodies which consists in electrolytically liberating gases from a liquid contained in a closed vessel, condensing and liquefying one of said gases, absorbing heat from a body adjacent said liquefied gas, by vaporizing said liquefied gas by heating and chemically combining the gas from said liquefied gas with another of said liberated gases, the product of said chemical combination being absorbed by and combined with said liquid from which said gases were liberated.

1,717,683—REFRIGERATOR. Joseph F. Hanrahan, Long Island City, N. Y. Filed Sept. 29, 1926. Serial No. 138,543. 1 Claim. (Cl. 62-99.)

The combination with a refrigerating chamber comprising a provision holding room, a slotted provision holding supporting wall spaced from the floor of the room and also from the side wall at one end thereof, of a relatively narrow chamber at the other end of the room, a refrigerating element in said chamber, the upper part of which is substantially against the top of the refrigerating chamber, said narrow chamber being formed by a separating partition having openings in the top and bottom thereof formed by termination of the partition near the top and bottom of the refrigerating chamber, the upper opening constituting an inlet for the warm air in the provision room and the lower constituting an outlet whereby a continuous circulation of air is automatically maintained through the slotted walls of the provision holding chamber, and a deflector at the bottom of the refrigerating chamber for directing the air into the provision chamber supporting wall.

1,717,847—PUMP FOR REFRIGERATING APPARATUS. Thomas J. Little, Jr., Detroit, Mich., assignor to Copeland Products, Inc., Detroit, Mich., a Corporation of Michigan. Filed Nov. 8, 1926. Serial No. 146,912. 5 Claims. (Cl. 29-58.)

1. In combination, a compressor housing having a compressor shaft therein and extending therefrom, a motor having a base plate secured thereto, a plurality of bolts secured in and depending from said plate, apertures in the head of said compressor housing into which said bolts extend, nuts on the bolts for adjusting their position longitudinally and for supporting said motor on said compressor whereby said motor may be vertically adjusted, a motor shaft extending from the motor and a belt connecting the two shafts.

1,717,857—MECHANICAL REFRIGERATION. Charles C. Spreen, Detroit, Mich., assignor to Kelvinator Corporation, Detroit, Mich., a Corporation of Michigan. Filed Dec. 27, 1926. Serial No. 157,212. 2 Claims. (Cl. 62-111.)

1. In a mechanical refrigerator system having a source of compressed refrigerant, a refrigerant-expansion refrigerating tank, and a container adapted to receive substances to be frozen; said tank having a recess extending thereinto from

one lateral wall thereof and having in its bottom wall a series of corrugations extending throughout its length; and said container having corrugations extending the full length of its bottom wall corresponding to the corrugations in said bottom of said recess whereby when the container is disposed in the recess its corrugations inter-engage thermally with the corrugations of the recess to increase the effective cooling area.

1,717,895—REFRIGERATING APPARATUS. Herman Scharnagel, Tompkinsville, N. Y., assignor to Harry W. Dyer, New York, N. Y. Filed Apr. 30, 1925. Serial No. 27,071. 2 Claims. (Cl. 62-136.)

1. Refrigerating apparatus comprising in combination, a refrigerating element, an expander, a manifold coil, a pump for circulating medium through said coil and said element, a motor for operating said pump, a base, said pump and said motor supported on said base, a cooling chamber housing said refrigerating element, said cooling chamber having walls heat insulated by a vacuum tank, a vacuum pump connected to said vacuum tank and detachably mounted on said base and operated by said motor and a thermostat in said cooling chamber for controlling the operation of said motor.

1,717,909—INTERMITTENTLY-OPERATING ABSORPTION REFRIGERATING MACHINE. Julius Bayer, Augsburg, Germany. Filed Feb. 4, 1926. Serial No. 251,797, and in Germany Feb. 7, 1927. 7 Claims. (Cl. 62-118.)

1. In a refrigerating apparatus the combination with a boiler-absorber, an evaporator, communicating means between the top of the boiler-absorber and the bottom of the evaporator and including a condenser, and additional connecting means establishing separate communication between the liquid in the boiler-absorber and the bottom of the evaporator and including a cut-off valve.

1,717,984—GRAVITY-FEED BOTTLE COOLING AND DISPENSING CABINET. Robert E. Lee, Cincinnati, Ohio. Filed Nov. 9, 1926. Serial No. 147,282. 8 Claims. (Cl. 312-36.)

1. In a bottle cooler and automatic feeder, a vertically disposed bottle guideway curved at its lower end and each wall having an oblique end with a plurality of ears thereon, flanges on the front edge of said walls to retain said bottles in said guideways to near the lower end thereof and having a bottle exit adjacent said lower end, an upwardly inclined wall across the lower end of said guideway adapted to be secured to said cooler, said inclined wall having slots therein adapted to receive said ears, which ears will bear against the outer surface of said inclined wall to hold said guideway and inclined wall in fixed relation with each other.

1,718,102—COOLING AND DISPENSING MACHINE. Fred A. Bauer, Louisville, Ky. Filed Sept. 3, 1927. Serial No. 217,406. 5 Claims. (Cl. 312-36.)

1. In a cooling and dispensing machine for bottled goods, a cabinet including a cooling chamber, a bottle dispensing tube arranged in said chamber and adapted to contain bottles in end to end relation, the outlet end of said tube passing through a wall of the cabinet, an endless member arranged in the cabinet adjacent the tube, projections thereon for engaging the bottles in the tube to force the bottles toward the outlet end of the tube, a motor for operating said member, a chute, a rack connected with the upper end thereof, the lower end of the chute being in communication with the inner end of the tube, a member for controlling the feeding of the bottles under the action of gravity from the chute into the tube and means actuated by the endless member for moving said controlling member into inoperative position.

Issued June 25

1,734,000—BOTTLE-DISPENSING AND REFRIGERATING APPARATUS. Dallas V. Wright, Fort Dodge, Iowa. Filed Oct. 2, 1928. Serial No. 309,731. Original No. 1,619,999, dated Mar. 8, 1927. Serial No. 689,097, filed Jan. 28, 1924. 9 Claims. (Cl. 312-36.)

1. In a dispensing device of the class described, the combination of a cabinet having an opening therein, and a closure for said opening, a chute construction in said cabinet including a lower fixed portion which adjacent the opening of the cabinet is curved upwardly, and a hinged upper portion connected adjacent the curved end of the fixed chute portion and adapted to be hingedly moved for horizontal positioning through the opening of the cabinet when the closure is opened from the cabinet for the purpose of refilling the chute, and means for supporting the hinged chute portion at an inclined position in the cabinet in aligning relation with the curved end of the fixed chute portion for dispensing bottles from the hinged chute portion into the fixed chute portion.

1,718,281—REFRIGERATING APPARATUS. John Ralph Fehr, Dayton, Ohio, assignor to Frigidaire Corporation, Dayton, Ohio, a Corporation of Delaware. Filed Feb. 29, 1928. Serial No. 257,960. 4 Claims. (Cl. 62-75.)

1. An ice cream cabinet comprising a tank for refrigerating liquid, a cover for said tank having an opening, an ice cream compartment in said tank including a metal sleeve permanently secured in said cabinet and adapted to extend into and above said liquid and touching the edge of said opening, an insulated top for said cabinet having an opening in alignment with said sleeve, a unitary cover for said ice cream compartment and for said last named opening, said cover including a metal plate adapted to fit on the side wall of said sleeve and to extend across the sleeve, said cover also including an insulated portion for sealing said last named opening in said top, and means for removing said cover as a unit from its normal position in said cabinet.

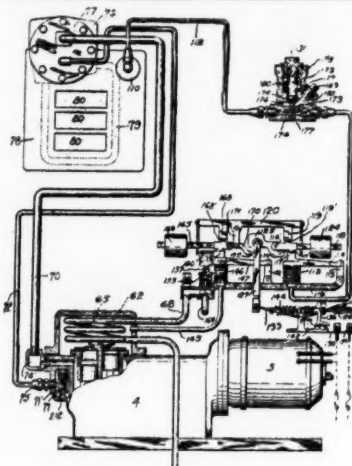
1,718,283—ABSORPTION REFRIGERATING MACHINE. Elias Wirth-Frey, Aarau, Switzerland, assignor to Sulzer Freres Societe Anonyme, Winterthur, Switzerland, a Corporation of Switzerland. Filed Mar. 14, 1924. Serial No. 699,159, and in Germany Apr. 19, 1923. 7 Claims. (Cl. 62-118.)

1. In an absorption refrigerating machine, the combination with a generator-absorber of an evaporator disposed at a higher level than the generator-absorber, a condenser arranged above the evaporator, an expulser or pressure pipe connecting the generator-absorber and the condenser, connecting means between the condenser and the evaporator, a suction or absorption pipe connecting the evaporator and the generator-absorber, the said pressure pipe branching separately from the said suction pipe, and an unobstructed continuously open overflow device between the said evaporator and the said generator-absorber.

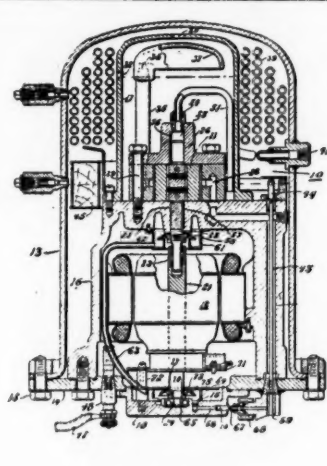
1,718,310—METHOD OF AND APPARATUS FOR COOLING LIQUIDS. Thomas Shipley, York, Pa., assignor, by mesne assignments, to York Ice Machinery Corporation, York, Pa., a Corporation of Delaware. Filed May 1, 1926. Serial No. 106,165. 15 Claims. (Cl. 62-172.)

1,718,311—EVAPORATOR AND BRINE COOLER. Thomas Shipley, York, Pa., assignor, by mesne assignments, to York Ice Machinery Corporation, York, Pa., a Corporation of Delaware. Filed Jan. 21, 1927. Serial No. 162,573. 7 Claims. (Cl. 62-160.)

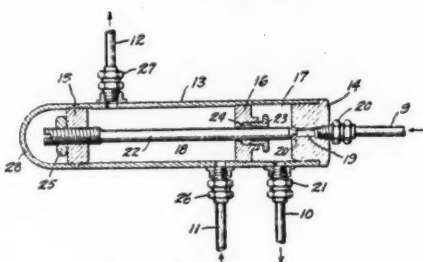
1,718,312—EVAPORATOR. Thomas Shipley, York, Pa., assignor, by mesne assignments, to York Ice Machinery Corporation, York, Pa., a Corporation of Delaware. Filed Jan. 21, 1927. Serial No. 162,574. 14 Claims. (Cl. 62-158.)



1,719,024



1,719,634



1,719,073

1,718,313—EVAPORATOR. Thomas Shipley, York, Pa., assignor, by mesne assignments, to York Ice Machinery Corporation, York, Pa., a Corporation of Delaware. Filed Feb. 23, 1927. Serial No. 170,394. 8 Claims. (Cl. 62-126.)

1,718,317—REFRIGERATING APPARATUS. William F. Swezey, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corporation, a Corporation of Delaware. Filed June 30, 1926. Serial No. 119,715. 5 Claims. (Cl. 220-9.)

1. An ice cream cabinet comprising a tank for refrigerating liquid, an ice cream compartment in said tank including a metal sleeve adapted to extend into and above said liquid, an insulated top for said cabinet having an opening in alignment with said sleeve, a unitary cover

for said ice cream compartment and for said opening, said cover including a metal plate adapted to fit on the side wall of said sleeve and to extend across the sleeve, said cover also including an insulated portion for sealing said opening in said top, and means for removing said cover as a unit from its normal position in said cabinet.

1,718,530—REFRIGERATING APPARATUS. Frank L. Cook, Louisville, Ky., assignor of one-half to S. D. Camper, Louisville, Ky. Filed July 16, 1926. Serial No. 122,935. 4 Claims. (Cl. 62-95.)

1. A refrigerating unit adapted to be used in conjunction with the brine tank and boiling coil of a household refrigerator for the boiling expansion and circulation of refrigerant for the

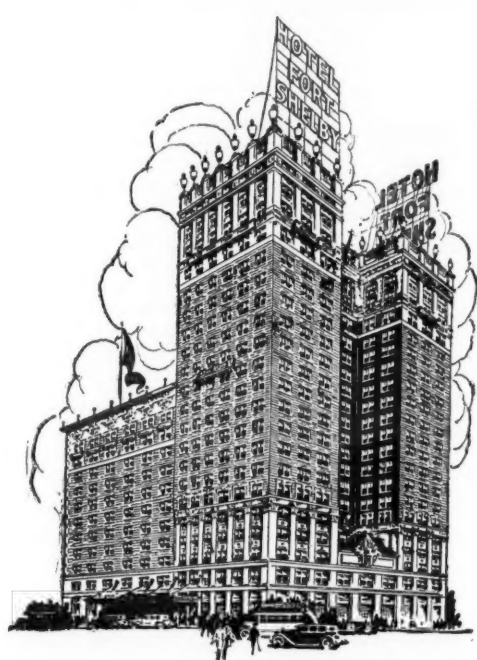
purpose of freezing and chilling liquids and creams in a freezing receptacle, comprising in combination: a base, a compressor mounted on said base, a condenser communicably connected with said compressor, a refrigerant receptacle communicably connected with said condenser, a two-way valve mounted on said base and communicably connected with said receptacle and with the boiling coil of said refrigerator, the other end of said refrigerator boiling coil being communicably connected with the low pressure side of said compressor, an expansion valve mounted on said base and communicably connected with said two-way valve, a freezer unit mounted on said base and having a freezing coil communicably connected at one end with said expansion valve, the other end of said freezing coil being communicably connected with said low pressure side of said compressor, a motor mounted on said base for driving said compressor, agitating means for stirring the contents of said freezer unit, said two-way valve being adapted to alternately conduct the refrigerant through said refrigerator boiling coil and the freezing coil of said freezer unit, and means for establishing a driving connection between said motor and said agitating means when said refrigerant is being conducted through said freezing coil.

1,718,683—METHOD OF AND APPARATUS FOR REFRIGERATION. Willis H. Carrier, Essex Falls, N. J., assignor to Carrier Engineering Corporation, Newark, N. J. Filed Aug. 21, 1924. Serial No. 733,296. 20 Claims. (Cl. 62-170.)

1. The method of refrigeration which includes compressing the vapor of a liquid refrigerant, passing the compressed vapor through a condenser in indirect contact with a cooling medium in said condenser, withdrawing a mixture of uncondensed gases and vapors from said condenser, bringing the withdrawn gaseous mixture and portions of the cold liquid refrigerant of the system into indirect heat exchange relation so that the vapors in the gaseous mixture are further condensed and the liquid refrigerant is heated and partially vaporized by the heat in the gaseous mixture, and separating said vaporized refrigerant from less volatile ingredients in said liquid refrigerant and returning said vaporized refrigerant to be again used in the refrigeration method.

1,718,690—INTERMITTENT-ABSORPTION REFRIGERATING APPARATUS. Cyrus H. Hapgood, Nutley, N. J. Filed Oct. 14, 1925. Serial No. 62,360. 6 Claims. (Cl. 62-5.)

1. In refrigerating apparatus of the intermittent absorption type, an absorption chamber, a condenser, a refrigerating chamber, and devices for periodically causing the refrigerant to be generated, condensed, boiled, and absorbed, including a heat exchange conduit associated with said absorption chamber, and means controlled by the weight of heat exchange fluid in a portion of said apparatus for alternately first causing a simultaneous flow of heating fluid through said conduit and of cooling fluid through said



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REFRIGERATION PATENTS

condenser and then causing a flow of cooling fluid through said conduit.

1,718,815—METHOD AND APPARATUS FOR COOLING AIR. Walter L. Fleisher, New York, N. Y., assignor, by mesne assignments, to Alitrium Ventilating Corporation, Jersey City, N. J., a Corporation of New Jersey. Filed Dec. 22, 1926. Serial No. 156,320. 9 Claims. (Cl. 62-129.)

A system of air cooling which comprises two stages of spray washers, a refrigerating unit including a water condenser for cooling the water for the second stage washer and means for circulating the water of the first stage washer through the water condenser.

Issued July 2

1,718,953—REFRIGERATING APPARATUS. Harold A. Greenwald, Detroit, Mich., assignor to Thomas C. Whitehead, Detroit, Mich. Filed Dec. 27, 1926. Serial No. 157,366. 1 Claim. (Cl. 62-116.)

A portable unit of a refrigerating apparatus comprising a pump for compressing a refrigerant, a radiator in which the compressed refrigerant is adapted to be condensed, a fan for drawing air through the radiator to facilitate the condensation of the refrigerant, a motor for driving the pump and fan, a common support for said pump, radiator and motor comprising a substantially flat base, the radiator, fan and motor being arranged in the order named upon said base, the length of said base being substantially equal to the distance between the front face of the radiator and the rear face of the motor, and an enclosure for said pump, fan and motor including a hood extending from the rear face of the radiator to a point in rear of the rear face of the motor, the top section of said hood being rigid with the radiator, the side sections of said hood being hingedly connected to the top section and detachably connected to the base at the side edges thereof whereby to provide ready access to said pump, fan and motor normally concealed within the enclosure, the cross sectional area of said hood being uniform throughout its length and being substantially equal to the cross sectional area of the radiator, and an apertured end section rigid with the top section aforesaid and the base and having discharge apertures for air drawn into the hood by said fan.

1,718,958—REFRIGERATOR AND THE LIKE. Herbert H. Hillman, Grand Haven, Mich., assignor to Challenge Refrigerator Company, Grand Haven, Mich., a Corporation of Michigan. Original application filed Sept. 17, 1926. Serial No. 220,228. Divided and this application filed Aug. 17, 1928. Serial No. 300,163. 1 Claim. (Cl. 62-116.)

In a structure of the class described, having a door opening, a hinged closure for said opening having a body and being provided with corners, a casing for said body having an inwardly extending peripheral flange, and a rebent web integral with and bridging the peripheral flange at the corners thereof at one edge of the closure to form pockets receiving the corners of the body member, and a hinge on the opposite edge of the closure for swingingly mounting the same and for securing the casing to the body.

1,719,024—REFRIGERATOR. John R. Replogle, Detroit, Mich., assignor, by mesne assignments, to Kelvinator Corporation, Detroit, Mich., a Corporation of Michigan. Filed Feb. 28, 1921. Serial No. 448,331. 23 Claims. (Cl. 62-178.)

23. In a mechanical refrigerating system, an evaporator having a refrigerant inlet opening and adapted to contain a body of liquid refrigerant and oil adapted to separate by gravitation, a tube extending into said evaporator and provided with an opening therein for conducting oil and gasified refrigerant therefrom, and means for maintaining the level of the liquid refrigerant in said evaporator below the opening in said tube.

1,719,073—REGULATING MECHANISM. Glenn Muffly, Detroit, Mich., assignor to Copeland Products, Inc., a Corporation of Michigan. Filed July 1, 1927. Serial No. 202,787. 5 Claims. (Cl. 62-8.)

1. The combination with a cooling element of a refrigerating mechanism a pair of chambers, an opening in the walls of one of said chambers for the introduction of liquid refrigerant into said chamber, a second opening in the walls of said chamber for the escape of said refrigerant to said cooling element, a unitary valve member secured against axial movement to a wall of the other of said chambers and extending through the length of said chamber into the first mentioned chamber and into cooperative relationship with the first mentioned opening, said valve member having a co-efficient of expansion relatively widely different from the walls of said other of said chambers, and means for passing said refrigerant from said cooling element through said other of said chambers.

1,719,074—REGULATING MECHANISM. Glenn Muffly, Detroit, Mich., assignor to Copeland Products, Inc., a Corporation of Michigan. Filed July 1, 1927. Serial No. 202,788. 8 Claims. (Cl. 62-8.)

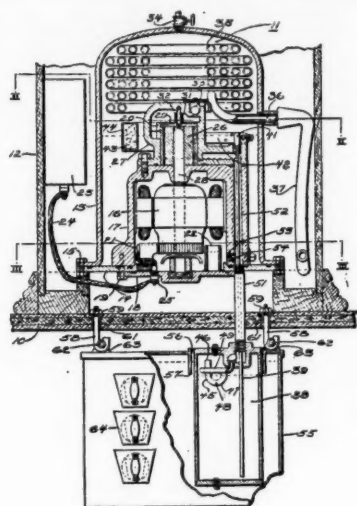
1. In combination with a support, a casing secured thereto, a deformable wall on said casing, an opening in said casing, a valve element carried by said deformable wall extending into operative relationship in respect to said opening, a second casing secured adjacent one end to said support and extending into contact with said deformable wall, and an evaporator comprising a passageway connecting said casings, said second casing having a relatively high co-efficient of expansion whereby movement thereof due to change in temperature thereof will control the position of said valve element relative to said opening.

1,719,075—REGULATING MECHANISM. Glenn Muffly and Hodgson S. Pierce, Detroit, Mich., assignors to Copeland Products, Inc., a Corporation of Michigan. Filed July 1, 1927. Serial No. 202,790. 7 Claims. (Cl. 62-8.)

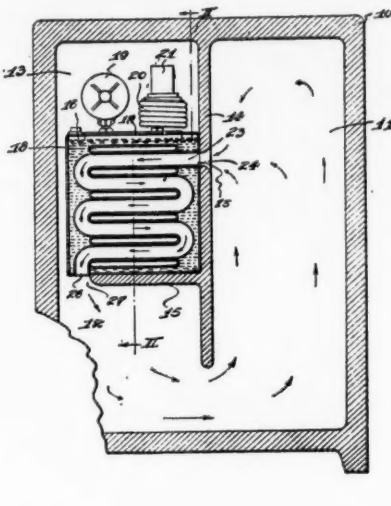
1. In combination, a cooling element having a relatively high co-efficient of expansion, a casing secured to said element, an opening in said casing for the passage of refrigerant, and a valve member movable in said casing secured at one end against movement to said cooling element at a point remote from said casing, said valve member extending into cooperative relationship with said opening and having a relatively low co-efficient of expansion whereby variations in the length of said cooling element due to change in temperature thereof will vary the position of said valve member relative to said casing.

1,719,117—REFRIGERATING APPARATUS. Jesse G. King, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corporation, a Corporation of Delaware. Filed Feb. 6, 1926. Serial No. 86,590. 7 Claims. (Cl. 62-95.)

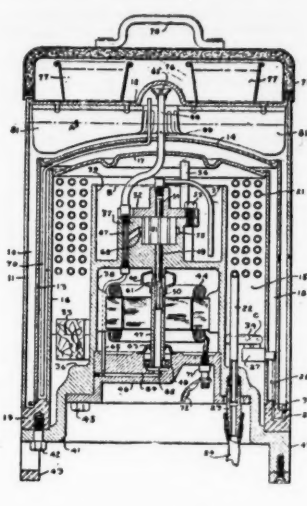
1. A cooling unit for mechanical refrigerators comprising: a tank adapted to contain liquid refrigerant at a constant level therein, a series of duct loops depending therefrom, an extension header connected to an end wall of said tank below the liquid level therein and extending longitudinally beyond said tank, and a second series of duct loops depending from said header.



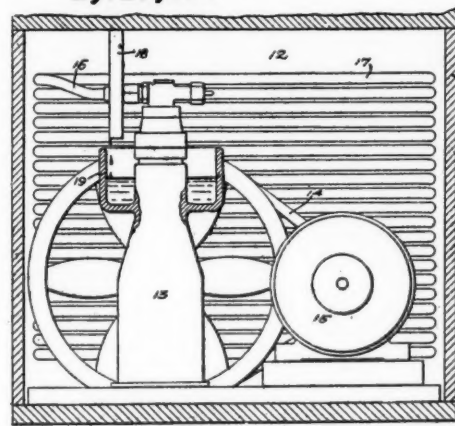
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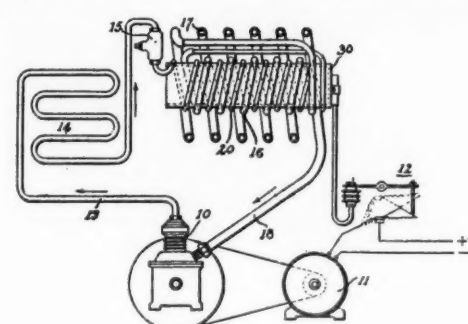
1,720,768



1,719,810



1,720,767



1,719,841

1,719,417—REFRIGERATING APPARATUS. Eugene L. Barnes, Buffalo, N. Y., assignor to The Barber Asphalt Company, Philadelphia, Pa., a Corporation of West Virginia. Filed May 4, 1927. Serial No. 188,692. 5 Claims. (Cl. 62-95.)

4. A refrigerating apparatus of the character described comprising a series of upright transverse vaporizing sections, a common refrigerant duct extending through and communicating in a fluid tight manner with said sections, and a longitudinal cooling chamber also extending through said sections, and having its walls conductively connected to said sections.

1,719,526—REFRIGERATOR AND DISPLAY CASE. Robert Trojahn, Jacksonville, Fla. Filed Aug. 18, 1927. Serial No. 213,844. 6 Claims. (Cl. 62-95.)

1. A refrigerator having a storage chamber, a device for cooling the chamber consisting of a plurality of outer containers arranged therein for holding a brine solution and for providing a continuous circulation of brine solution there-

between, refrigerant tubes extending through the containers, means for forming a thermosiphon effect for maintaining a continuous circulation of brine liquid.

1,719,634—REFRIGERATOR. Matson C. Terry, Mansfield, Ohio, assignor to Westinghouse Electric and Manufacturing Company, a Corporation of Pennsylvania. Filed June 4, 1923. Serial No. 643,369. Renewed Dec. 10, 1926. 13 Claims. (Cl. 62-116.)

11. In a refrigerating apparatus in which a refrigerant fluid is successively vaporized, compressed and condensed in a repeating cycle, a chamber, a motor and a compressor disposed therein, a shaft connecting the motor and the compressor, a bearing provided in the chamber for supporting one end of the shaft, means for supplying lubricant to the bearing, commutator brushes associated with the motor, means for supporting the commutator brushes including a plurality of members having vitreous surfaces, a baffle interposed between the commutator brushes and the bearing for restricting

communication therebetween, a lubricant arrester disposed adjacent to the baffle and secured to the shaft, whereby lubricant discharged from the bearing is thrown away from the shaft by the action of centrifugal force, said lubricant arrester having that portion of its surface which is adjacent to the baffle covered with a vitreous substance, a splash cylinder surrounding the arrester for segregating the lubricant thrown off by the arrester, and means for removing lubricant discharged from the bearing.

1,719,692—REFRIGERATING APPARATUS AND PROCESS FOR REFRIGERATION. Benjamin M. Des Jardins, West Hartford, Conn. Filed Mar. 21, 1924. Serial No. 700,810. 20 Claims. (Cl. 62-92.)

1. A refrigerating apparatus comprising a vacuum wall container for a body of liquefied gas, and a calibrated heat leak extending through the wall of said container for transferring heat to said body of liquefied gas at a predetermined rate, said heat leak being ad-

justable to vary the rate of conduction of heat to said body.

1,719,807—REFRIGERATOR. Andrew A. Kucher, Chester, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed June 4, 1923. Serial No. 643,364. 25 Claims. (Cl. 62-178.)

1,719,808—REFRIGERATOR. Andrew A. Kucher, Chester, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed July 10, 1923. Serial No. 650,667. 8 Claims. (Cl. 62-116.)

1. In a refrigerating apparatus, the combination of an evaporator, a condenser, a compressor having suction and discharge ports, a casing communicating with the suction port of the compressor, and a removable receptacle disposed within the casing for receiving a quantity of vaporizable liquid refrigerant.

1,719,809—REFRIGERATOR. Andrew A. Kucher, Chester, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed July 10, 1923. Serial No. 650,669. 8 Claims. (Cl. 62-95.)

1. In a refrigerating apparatus, the combination of a refrigerator box, a cooling element disposed within the refrigerator box, and an ice drawer located in the cooling element and having a portion projecting through and extending beyond one of the walls of the refrigerator box.

7. In a refrigerating apparatus, the combination of a compressor, a condenser for condensing the refrigerant vapor discharged by the compressor, an evaporator, a conduit communicating with the inlet of the compressor for withdrawing refrigerant vapor from the evaporator, means for entraining a liquid mixture of refrigerant and lubricant in the refrigerant vapor removed from the evaporator, and means for subjecting the entrained liquid mixture to the heat of both the interior of the refrigerator box and to the heat of the condensed refrigerant, whereby the entrained liquid entering the compressor is substantially a lubricant.

1,719,810—REFRIGERATING MACHINE. Andrew A. Kucher, Chester, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Dec. 28, 1923. Serial No. 693,156. 33 Claims. (Cl. 62-116.)

1. In a refrigerating apparatus, the combination of a condenser, a compressor, motive means for the compressor, power-transmitting means interposed between the motive means and the compressor, and an evaporation chamber arranged to house the condenser, the compressor, the motive means and power-transmitting means.

1,719,818—REFRIGERATING PROCESS AND APPARATUS. Louis A. Benoist and Gardner T. Voorhees, Chicago, Ill. Filed Oct. 25, 1926. Serial No. 144,160. 14 Claims. (Cl. 62-171.)

1,719,820—REFRIGERATOR. Andrew A. Kucher, Chester, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed June 4, 1923. Serial No. 643,362. Renewed Nov. 23, 1926. 17 Claims. (Cl. 62-116.)

1. In a refrigerating apparatus in which a working fluid composed of an intimate mixture of a refrigerant and a lubricant is employed, the combination of a condensing chamber, means for maintaining a body of liquid working fluid therein, a compressor disposed within the condensing chamber and above the level of the liquid working fluid, means for passing liquid working fluid over the compressor, whereby the heat of the compressor is utilized to vaporize off the refrigerant contained in the liquid working fluid, means disposed within the condensing

(Concluded on Page 24)

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REFRIGERATION PATENTS

(Concluded from Page 23)

chamber for collecting the liquid working fluid which has been subjected to the heat of the compressor, and means of utilizing the collected liquid to lubricate the apparatus.

1,719,841—REFRIGERATING APPARATUS. Harry B. Hull, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corporation, a Corporation of Delaware. Filed Sept. 30, 1927. Serial No. 223,108. 15 Claims. (Cl. 62-8.)

1. In a refrigeration system in combination, an evaporator, means for circulating a refrigerating medium through said evaporator, a valve for controlling the flow of refrigerating medium to said evaporator and responsive to pressure conditions of said evaporator, and means interposed between the valve and said evaporator for producing a pressure differential between said valve and said evaporator.

1,719,943—BOTTLE COOLER. John Francis Pressley, Toronto, Ontario, Canada. Filed Apr. 10, 1928. Serial No. 268,995. 3 Claims. (Cl. 312-36.)

1. A bottle cooling device comprising a main casing provided with an opened top and insulated walls, a plurality of concentric semi-cylindrical members spaced apart to form bottle guides and an ice receptacle centrally thereof, laterally extending portions extending from such members to rest upon the upper edge of the casing, and vertical partitions extending through the interspaces between the concentric members and resting at its lower end upon the bottom of the casing.

1,719,987—REFRIGERANT FLUE ICE AND METHOD. Harry S. Mayall, Spokane, Wash. Filed June 2, 1927. Serial No. 196,056. 6 Claims. (Cl. 62-172.)

1,720,125—DOOR-OPERATING MECHANISM FOR REFRIGERATOR CAR. Stevie B. Haseltine, Chicago, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a Corporation of Delaware. Filed Jan. 16, 1926. Serial No. 81,619. 7 Claims. (Cl. 268-72.)

1,720,143—REFRIGERATOR-CAR-DOOR OPERATING AND LOCKING MEANS. John F. O'Connor, Chicago, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a Corporation of Delaware. Filed Apr. 27, 1928. Serial No. 273,199. 10 Claims. (Cl. 268-72.)

1,720,160—ABSORPTION REFRIGERATING MACHINE. Elias Wirth-Frey, Aarau, Switzerland. Filed June 28, 1923. Serial No. 647,733, and in Germany Jan. 5, 1923. 2 Claims. (Cl. 62-118.)

1. An absorption refrigerating machine comprising in combination a generator-absorber for vaporizing a relatively volatile cooling agent from a relatively low volatile absorbing medium, a condenser for condensing said vaporized cooling agent, an evaporator arranged at a higher level than said generator-absorber, said evaporator comprising upper and lower portions, a constricted passage between said upper and lower portions, means for transferring condensate from said condenser to said upper portion, a suction pipe connecting said upper portion with said generator-absorber, and an unobstructed continuously open residue return line from said lower portion to said suction pipe, said return line being capable of allowing the transfer from the bottom of said lower portion of the contents in the lower part of said lower portion, on the level of the contents of the evaporator being in line with said constricted passage.

1,720,163—LIQUID COOLER. John D. Beck, Montgomery, Ala. Filed Aug. 27, 1928. Serial No. 302,399. 3 Claims. (Cl. 62-142.)

1. A liquid cooler of the character described comprising a main container, an enlarged portion formed with said container and providing an interiorly arranged shoulder, an ice container supported by said shoulder and being formed with vertically disposed grooves on its outer surface, a cover for said main container, said cover, main container and ice container being formed from earthenware, said ice container being adapted to receive liquid to be cooled below the ice container and a spigot for said main container and arranged in the side wall thereof adjacent its bottom.

1,720,171—ELECTRIC REFRIGERATING APPARATUS. Clarence M. Davison, Baltimore, Md., assignor to Poole Engineering and Machine Company, Baltimore, Md., a Corporation of Maryland. Filed June 12, 1926. Serial No. 115,532. 12 Claims. (Cl. 62-115.)

1. In a refrigerating system, a cooling unit having a passage for a refrigerating medium which is gasified in said unit, a compressor for primarily forcing said medium and incidentally a sealing liquid toward and from said cooling unit, means for introducing a sealing liquid into said compressor, means for extracting the sealing liquid from the refrigerating medium before the latter reaches the cooling unit, means for returning the refrigerating medium in gaseous form from the cooling unit to the compressor, and a separate return for the extracted sealing liquid to said compressor.

1,720,173—DOOR-OPERATING MECHANISM. Henry Fuchs, Chicago, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a Corporation of Delaware. Filed Feb. 18, 1926. Serial No. 89,009. 7 Claims. (Cl. 268-72.)

1,720,603—REFRIGERATING MACHINE. Guido Maluri and Fortunato Nino Moraschi, Turin, Italy, assignors to Anton Edwin Anderson and Raoul Felice Bossini, London, England. Filed July 14, 1925. Serial No. 43,504, and in Italy June 3, 1924. 1 Claim. (Cl. 62-5.)

1. Refrigerating apparatus comprising a vaporizing still, a condenser, a duct connecting the still and condenser, an absorbing tank, an evaporator forming a conduit between the condenser and the absorbing tank, a duct for weak solution leading from the lower portion of the still to the evaporator conduit and hence to the absorbing tank, and a pulsometer comprising a tank having valved connections of unequal capacity with the first named duct and the lower portion of the absorbing tank, the last named connection being of a greater capacity, and means actuated by variations in the height of the liquid level in said pulsometer tank to alternately open and close said valved connections according to variations in liquid level in said pulsometer tank, said means comprising a float in said pulsometer tank and a weight also in said tank and connected to said float for operation thereby.

Issued July 16

1,720,726—DOOR-OPERATING MECHANISM. William A. Geiger, Chicago, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a Corporation of Delaware. Filed May 20, 1926. Serial No. 110,434. 10 Claims. (Cl. 268-72.)

1,720,767—MECHANICAL REFRIGERATION. Charles C. Spreen, Detroit, Mich., assignor to Kelvinator Corporation, Detroit, Mich., a Corporation of Michigan. Filed June 3, 1926. Serial No. 113,471. 4 Claims. (Cl. 62-116.)

1. In a mechanical refrigerator unit, in combination with a cabinet having a refrigerating chamber and means to catch and collect and convey away liquid from said chamber, refrigerating mechanism disposed exteriorly of said chamber and of a type having a compressor

which gives off heat, and receptacle means arranged to receive such liquid and position exteriorly or said refrigerating chamber in intimate thermal relation with said compressor to receive heat therefrom.

1,720,768—COOLING UNIT FOR REFRIGERATING MECHANISM. Charles C. Spreen, Detroit, Mich., assignor to Kelvinator Corporation, Detroit, Mich., a Corporation of Michigan. Filed Sept. 8, 1927. Serial No. 218,159. 6 Claims. (Cl. 62-95.)

1. In a refrigerator, a cooling unit provided with a conduit of sinuous contour adapted to serve as a container for a heat absorbing medium, and a conduit of sinuous contour adapted to serve as a passageway for a cooling fluid and having its convolutions interlaced with the convolutions of the first mentioned conduit.

1,720,797—REFRIGERATING APPARATUS. Charles L. McCuen, Chicago, Ill., assignor, by mesne assignments, to Frigidaire Corporation, a Corporation of Delaware. Filed Jan. 6, 1921. Serial No. 435,415. 18 Claims. (Cl. 62-115.)

1. A refrigerating apparatus adapted to receive therein a refrigerant and a lubricant, said apparatus comprising a pump for compressing refrigerant, means providing a chamber into which the pump discharges, means for condensing the compressed refrigerant including a refrigerant liquid reservoir disposed below said chamber, an oil-cooling means in operative communication with the pump and positioned between said chamber and said reservoir.

1,720,918—COOLING TANK. Harold H. Nesbitt, Belair, Md. Filed July 30, 1926. Serial No. 126,059. 1 Claim. (Cl. 62-95.)

A cooling tank consisting of a main body portion of suitable metal, the portion having an

opening in the top, a lid or cap for the opening, the lid being brought into sealed relationship with the main body portion, absorption coils extending from the sides of the main body portion, the ends of the coils being in open communication with the main body portion of the tank and hermetically sealed thereto, cooling tubes extending from the main body portion and in open communication therewith, the ends of the tube being hermetically sealed to the main body portion, the cooling tubes being arranged to receive cooling pans therebetween, the pans having suitable supports extending between the tubes, means for increasing the absorption area consisting of a shield made of suitable absorption material adapted to cover the ice pans between the cooling tubes, thereby forming a closed shelf for the pans.

1,720,919—FLOAT MECHANISM FOR COOLING TANKS. Harold H. Nesbitt, Belair, Md. Filed July 30, 1926. Serial No. 126,061. Renewed Dec. 12, 1928. 5 Claims. (Cl. 138-104.)

2. In a device of the character described, a tank, a valve in the tank, float controlled means in the tank for operating the valve comprising a plurality of floats, each float being adapted to operate the valve as required irrespective of any other float, tension means for snapping the valve into open and closed position after movement of the floats, means for supporting the floats consisting of a bracket portion extending from a suitable portion of the tank.

1,720,935—COMBINATION REFRIGERATING DISH. Joseph J. Tressel, Cincinnati, Ohio, assignor to Dri-Kold Manufacturing Company, Birmingham, Ala., a Corporation of Delaware. Filed Oct. 8, 1926. Serial No. 140,343. 10 Claims. (Cl. 62-10.)

1,721,145—REFRIGERATED CASE. Albert H. Bromann, River Forest, Ill., assignor to Bromann Bros., Chicago, Ill., a Corporation of Illinois. Filed Jan. 23, 1928. Serial No. 248,612. 10 Claims. (Cl. 62-37.)

1. A refrigerated show case comprising, in combination, a display and cooling compartment having transparent walls, a cooling coil comprising a plurality of longitudinal pipe sections extending approximately horizontally across the upper portion of said compartment close to and along the rear portion of the top wall thereof, said coil being adapted to be connected to a source of refrigerant, and an inclined drip pan mounted in said cause underlying said coil, said pan comprising a pair of end members adapted to be positioned beneath the end portions of said coil, and a plurality of narrow troughs connected to said end members and adapted to drain into one of said members, said troughs being spaced laterally one from the other so that each of said troughs will underlie one of said pipe sections of said coil, said pan being mounted in said case to cause drainage from one end member into the other along said troughs, and a drain connected to and adapted to convey liquid from the lower one of said end members.

1,721,232. BOTTLE REFRIGERATOR. Lindsay G. Roach, Fredericksburg, Va. Filed Sept. 27, 1928. Serial No. 308,779. 1 Claim. (Cl. 312-36.)

A bottle refrigerator, provided with chambers for reception of bottles, receiving and delivery openings for said chambers, covers for said openings, and a pusher formed with an opening in its upper portion adapted to prevent the insertion of a bottle in its inverted position.

1,721,311—REFRIGERATING VESSEL. Peter J. Muenchen, New York, N. Y., assignor to Arctic

Refrigeration Manufacturing Corporation, Wilmington, Del., a Corporation of Delaware. Filed Sept. 28, 1925. Serial No. 59,032. Renewed Jan. 16, 1929. 1 Claim. (Cl. 62-1.)

1,721,312—REFRIGERATING SYSTEM. Peter J. Muenchen, New York, N. Y., assignor to Arctic Refrigeration Manufacturing Corporation, Wilmington, Del., a Corporation of Delaware. Filed Oct. 31, 1925. Serial No. 65,931. Renewed Jan. 16, 1929. 10 Claims. (Cl. 62-92.)

1. Means for producing cold by means of a liquefied gas, comprising a liquefied gas snow vessel, a nozzle communicating with said vessel and having connection with a source of the liquefied gas, an exhaust connected with the vessel, a regulator connected with said exhaust and controlling the supply to said nozzle, an exhaust leading from said regulator, and means subject to the cold emanating from said vessel for automatically stopping the latter exhaust with an ice plug.

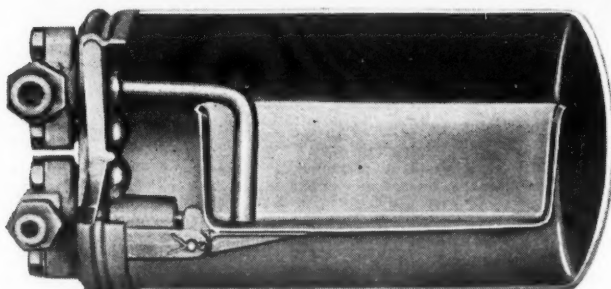
NOTE

At the last minute it is found impossible to include refrigeration patents issued subsequent to July 16. These will appear in the September 11 issue.

FEDDERS

STANDARD APPLIANCES

NEW PAN FLOAT VALVES



PHANTOM VIEW

Pan Float Valves

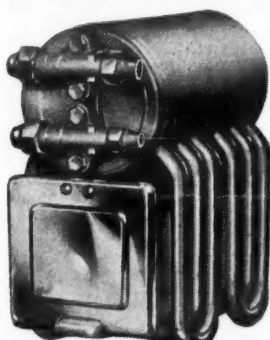
Engineers will appreciate the many advantages offered by this "Pan" type float valve. Pressures are equal on all sides of float, and by removing the liquid shut off valve the fine mesh screen, valve seat and valve needle may be removed for repairs or renewals. The same float is used for both Sulphur Dioxide and Methyl Chloride.

There is a quiet zone in the float where no boiling takes place, and oil which may be in solution or floating on top of the refrigerant carries over into the float in the form of bubbles or by capillary attraction.

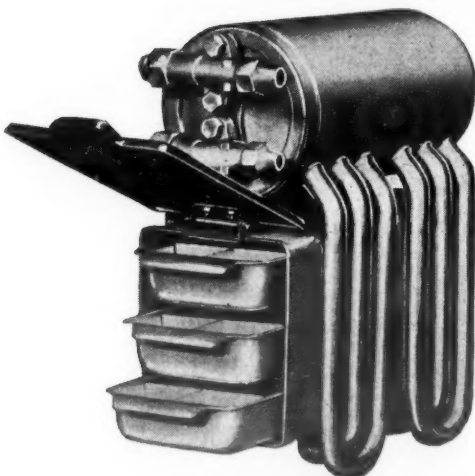
There are 60 standard evaporators for both commercial and domestic application.

Multiple Installations

The designs shown here illustrate three sizes of evaporators, which are especially suited for multiple installations, or small cabinet assembly. This splendid operating mechanism not only is more efficient in operation than other types, but owing to economies of construction they are lower in cost.



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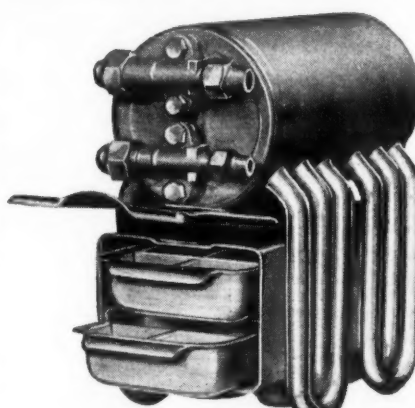
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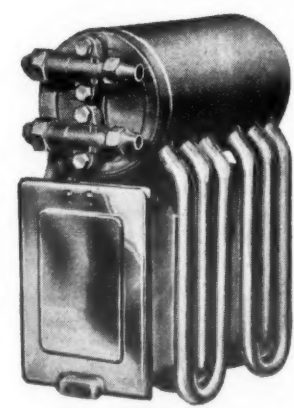
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No. K02



No. K03

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Standard Appliances

(sold only to refrigerating machine manufacturers).

Index to Volume III, by Names and Subjects

Part I, Index of Subjects

NOTE—In compiling an index of Volume III, which includes those issues from September 12, 1928 (Serial No. 51) to the present issue (Serial No. 76) two main divisions were made and all issues with the exception of the present one were included. First, the subjects of principal articles, editorials, illustrations, and displays are listed below in Part I, to enable readers to locate various discussions or articles that have appeared in the news columns. Second, names of companies and individuals prominently mentioned are listed in Part II, which starts on page 27.

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